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UNITED STATES

EXPLORING EXPEDITION.

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UNDER THE COMMAND OF
CHARLES WILKES, U.S.N.
VOL. XV.

BOTANY.

PHANEROGAMIA.

BY
ASA GRAY, M.D.

WITH A FOLIO ATLAS OF ONE HUNDRED PLATES.

PART I.

PHILADELPHIA:
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BOTANY.

PHANEROGAMIA.

ORD. RANUNCULACEÆ.

1. CLEMATIS, *Linn.*

1. CLEMATIS PICKERINGII, Sp. Nov.

C. floribus paniculatis; foliis ternatis; foliolis membranaceis ovatis acuminatis integerrimis quinquenervatis laxe venosis glabris; pedunculis 3–7-floris; caudis carpellorum plumosis.

HAB. Ovolau, Feejee Islands.

Climbing, glabrous, at least when old, except the loose and ample panicles, which are minutely pubescent. *Leaves ternate,* without any tendency to farther division. *Leaflets thin and membranaceous, ovate, acuminate,* the larger ones conspicuously so, rounded or sometimes slightly cordate at the base, entire, *five-nerved* or quintuplinerved, and not inconspicuously *veiny,* glabrous, about 3 inches long, on partial petioles of about an inch in length. Flowers not seen; the only specimen procured being in advanced fruit. The fructiferous *panicles elongated,* somewhat racemiform; the *peduncles* 2 inches long, 3–7-*flowered,* rather longer than the pedicels. Bracts subulate, minute. Achenia oblong, pointed, pubescent; the *tails silky-plumose,* an inch long.

This is doubtless a polygamo-diœcious species. Although the flowers have fallen, they were evidently smaller than those of *C. indivisa* of New Zealand, of which the sepals, in a specimen gathered by Mr. Mossman, are fully an inch in length, and the thin, broader, and acuminated leaves, and more compound panicles, further distinguish it from that species. It has more points of resemblance with *C. fœtida*, Raoul, Pl. Nouv. Zel. p. 23, t. 22; but that likewise has coriaceous leaflets, which, moreover, are hairy underneath. I have dedicated the species to Dr. Pickering, who, with Mr. Brackenridge, secured a fine botanical collection in the Feejee Islands, under circumstances of great personal risk.

2. CLEMATIS PARVIFLORA, *A. Cunn.*

C. parviflora, A. Cunn. Bot. N. Zeal. in Ann. & Mag. Nat. Hist. 4, p. 259; Hook. f. Fl. N. Zeal. p. 7.

HAB. Tippona, Bay of Islands, New Zealand. (The specimens destitute both of flowers and fruit.)

3. CLEMATIS INDIVISA, *Willd.*

C. indivisa, Willd. Spec. Pl. 2, p. 1291; DC. Prodr. 1, p. 5; A. Rich. Fl. Nouv. Zel., p. 228; Hook. Bot. Mag. t. 4398; Hook. f. Fl. N. Zeal. p. 6.
C. integrifolia, Forst. Prodr. no. 321, non Linn.

HAB. Bay of Islands, New Zealand. (Foliage only; a peculiar state, with very thin leaves; evidently growing in deep shade.)

4. CLEMATIS ARISTATA, *R. Br.*

C. aristata, R. Br. in DC. Syst. 1, p. 147; Ker, in Bot. Mag. t. 293; Hook. f. in Jour. Bot. 2, p. 399.

HAB. Sydney, New South Wales.

The foliage varies greatly in this, as in other species of the genus; but our specimens, both in flower and fruit, belong to the typical form.

The leaflets show manifest traces of variegation with dark-brown and purple, as is said by Dr. Hooker to occur in Tasmanian specimens of this species.

5. Clematis Peruviana, *DC.*

C. Peruviana, DC. Syst. 1, p. 141, & Prodr. 1, p. 4.
C. sericea, Hook. Bot. Misc. 2, p. 205, var. β., non Humb. & Bonpl.

Hab. Baños, Andes of Peru.

Although very imperfect, like too many in the interesting collection hastily made in the Peruvian Andes, the specimen suffices to identify the plant as the *C. Peruviana*, described from Dombey's collection; and also as the plant gathered between Obrajillo and Culluay, by Cruckshanks, and named by Hooker *C. sericea;* but it is not the *C. sericea* of Humboldt and Bonpland. Mr. Matthews and Mr. M'Lean have also sent to the Hookerian herbarium specimens of the same species from the Andes of Peru.

6. Clematis dioica, *Linn.*

C. dioica, Linn. Amœn. Acad. 5, p. 398, & Spec. ed. 2, p. 765; DC. Syst. 1, p. 143; Benth. Pl. Hartw. p. 167, no. 872.

Hab. Baños, Andes of Peru.

Our specimen accords with the Bogotensian plant of Hartweg, referred by Bentham to *C. dioica*, as well as with that gathered by Matthews at Chachapoyas; and I see no valid differences between it and the Jamaica plant.

7. Clematis Hænkeana, *Presl.?*

C. caulibus scandentibus glabriusculis teretibus; foliis quinque foliolatis; foliolis cordatis acuminatis integris vel apicem versus dentibus grossis

2–3 instructis, adultis supra glabratis subtus petiolis cum pedunculis sepalisque molliter pubescentibus; paniculis multifloris.

C. Hænkeana, Presl. Rel. Hænk. 2. p. 69?

HAB. Obrajillo, Peru.

Although probably the Clematis Hænkeana of Presl., I suspect this plant may be no more than a less pubescent *C. sericea*, Humb. & Bonpl. The *stems*, or rather branches, are *terete*, very slightly sulcate-striate, and *nearly glabrous*, except the younger parts. The leaves, even the uppermost, are pinnate, with 5 *leaflets;* these are ovate, *cordate* at the base, *acuminate*, from 2 to 3 inches long, rather thin, *entire* or *coarsely 2–3-toothed*, 3–5-nerved and veiny; the younger clothed with a soft and fine, rather silky pubescence (like that of the petioles, inflorescence, &c.) on both surfaces, but the *upper surface* soon becomes *glabrous*, or nearly so. The specimen is in flower only, and the axillary, rather densely flowered panicles are not longer than the leaves. Flowers about as large as those of *C. Virginiana*. Sepals 4, obovate-oblong, about the length of the pedicels, silky-pubescent externally. There is no fruit; but the styles in the fertile flowers are very silky-villous. In the same panicle are staminate flowers with abortive ovaries, and hermaphrodite flowers with both perfect anthers and fertile ovaries, just as indicated by Mr. Bentham of *C. dioica* (Plantæ Hartwegianæ, p. 157), and as is the case, I believe, in most of the related species; although some are diœciously polygamous.

2. ANEMONE, *Tourn.*

1. ANEMONE HELLEBORIFOLIA, *DC.*

A. "foliis pedatisectis, segmentis glabris subcoriaceis [vel membranaceis] subpetiolulatis basi cuneatis trifidis, lobis serratis acutis; involucris omnibus trifoliis subsessilibus; ovariis glabris;" acheniis lævibus oblongis vix compressis gibbosis ex angulo interno breviter stipitatis stylo brevi nudo revoluto uncinatis in capitulum globosum supra receptaculum villosum aggregatis.

A. helleborifolia, DC. Syst. 1, p. 211, & Prodr. 1, p. 21.

Hab. Near Obrajillo (in fruit) and Baños (in flower), Andes of Peru.

To complete the character of this well-marked species, that of the fruit only was needed, which desideratum is supplied by one of the specimens in this collection. The *achenia*, like the ovaries, are perfectly *glabrous*, *narrowly oblong*, turgid, distinctly *stipitate* from the inner angle at the base, therefore *gibbous*, and tipped with a *short, strongly revolute* or *hooked style;* they form a globular head, the receptacle of which is villous. The leaves of our flowering specimen, moreover, are *thin and membranaceous*, and so they are in one of the specimens from Matthews, in the herbarium of Sir Wm. Hooker; while in others, as in Dombey's plant, they are more or less coriaceous. The flower also varies in size.

3. RANUNCULUS, *Linn.*

* *Peruvianæ et Chilenses.*

1. Ranunculus præmorsus, *H. B. K.*

R. præmorsus, H. B. K. in DC. Syst. 1, p. 292, & Nov. Gen. & Spec. 5, p. 47; Benth. Pl. Hartw., p. 158.

Hab. Baños, Andes of Peru.

Both Cruckshanks and Matthews have gathered the same species in the Peruvian Andes (about Pasco, &c.), and some specimens show the præmose rhizoma.

2. Ranunculus Bonplandianus, *H. B. K. l. c.*

Var. *foliis etiam pagina superiore pubescenti-pilosis; caulibus decumbentibus vel declinatis.*

Hab. Baños, Andes of Peru.

Stems a foot long, *decumbent or reclining*, sparsely hirsute with long hairs, those of the lower part of the stem spreading, those of the peduncles appressed and more strigose. *Leaves pilose-hirsute on both surfaces;* the radical and lower cauline trisected; the upper three-parted or trifid; their divisions incised. Flowers as large as those of *R. acris*. Petals 10 or 12, spatulate-obovate, entire, apparently light yellow. Styles uncinate-recurved. Fruit not seen.

3. RANUNCULUS CHILENSIS, *DC.*

R. Chilensis, DC. Syst. 1, p. 286; Schlecht. Animad. Ranun. p. 27; Hook. & Arn. Bot. Beech. Voy. p. 4, t. 3; Gay, Fl. Chil. 1, p. 42; Hook. f. Fl. Antarc. p. 224.
Casalea Chilensis, St. Hil. Fl. Bras. Merid. 1, p. 9.

HAB. About Valparaiso and Santiago.

Although the sepals are only three (a point unnoticed by Hooker and Arnott); it has no further resemblance to St. Hilaire's genus Casalea, to which he referred it.

* * *Antarctici.*

4. RANUNCULUS BITERNATUS, *Smith.*

R. biternatus, Smith, in Rees Cycl. no. 48; DC. Syst. 1, p. 236; Deless, Ic. Sel. 1, t. 24; Hook. Ic. Pl. t. 397; Hook. f. Fl. Antarc. p. 224.
R. exiguus, D'Urv.; Gaudich. Bot. Freyc. Voy. p. 136.

HAB. Orange Harbour, Fuegia.

This species has been gathered by nearly all Antarctic collectors, from Commerson and Banks down to the most recent times. It takes the place of the Arctic *R. Lapponicus* and *R. pygmæus*. The petals are decidedly yellow, as stated by Hooker (not white, as described by DeCandolle), but rather pale. The fruit was first represented by Hooker (*Icon. supr. cit.*); when mature it is considerably rounder than in his figure.

* * * *Novo-Zelandici et Aucklandici.*

5. Ranunculus rivularis, *Banks & Sol.*

Ranunculus rivularis, Banks & Solander, Mss. in Herb. Banks; DC. Syst. 1, p. 270, & Prodr. 1, p. 34; A. Cunn., Bot. N. Zeal. in Ann. & Mag. Nat. Hist. 4, p. 257; Hook. f. Fl. N. Zeal., p. 11.

Hab. Bay of Islands, New Zealand.

The characters of this species given by DeCandolle are well completed by Cunningham. In our specimens the achenia, sometimes 12 or more in number, are manifestly compressed, and surrounded by a sharp margin. The species is related to the preceding.

6. Ranunculus acaulis, *Banks & Sol.*

Ranunculus acaulis, Banks & Solander, l. c.; DC., l. c., A. Cunn., l. c.; Hook. f. Fl. Antarc. p. 4. t. 2, & Fl. N. Zeal. p. 11.

Hab. Bay of Islands, New Zealand.

This species is admirably illustrated by Dr. Hooker, in his Antarctic Flora, from Aucklandian specimens, and is again described in his Flora of New Zealand.

7. Ranunculus hirtus, *Banks & Sol.*

R. hirtus, Banks & Solander, l. c.; DC. l. c. p. 289; A. Cunn. l. c. p. 259; Hook. f. Fl. N. Zeal. p. 9.

Hab. Bay of Islands, New Zealand.

This has smaller flowers, especially the petals, and more incised leaves, with sharper lobes, than the following. I should suppose that this was the plant which Richard and Cunningham referred to *R. acris*, notwithstanding the small flowers. But Dr. Hooker adduces the synonym under *R. plebeius*.

8. Ranunculus plebeius, *R. Br.?*

Ranunculus plebeius, A. Cunn., Bot. N. Zeal., l. c. p. 258; Hook. f. Fl. N. Zeal. p. 9; an R. Br.?

Hab. Bay of Islands, New Zealand.

This is certainly the R. plebeius of A. Cunningham, and a species abundantly collected in New Zealand by Mr. Colenso and Dr. Hooker; but I doubt if it be Mr. Brown's New Holland species. It does resemble some forms of the polymorphous *R. repens;* but is quite unlike *R. acris.*

9. Ranunculus Aucklandicus, Sp. Nov.

R. sericeo-strigosus; caule simplici e rhizomate subrepente erecto bifoliato superne longe nudo unifloro; foliis longe petiolatis rotundatis vel reniformibus trifidis sinubus clausis, segmentis cuneiformibus inciso-sublobatis; carpellis compressis immarginatis lævibus breviter apiculatis in receptaculum cylindraceum pilosiusculum acervatis.

Hab. Lord Auckland Islands.

Rhizoma horizontal, short and rather thick, sending out stout fibrous roots, and throwing up a solitary erect stem, which in the fruiting state is from 6 to 10 inches high, rather stout, *strigose-hirsute* with appressed and stiff hairs, two-leaved below, the long and naked *summit* or peduncle from 3 to 6 inches long. Radical and cauline leaves similar, on long strigose-hirsute petioles, which are dilated and partly sheathing at the base; the *blade round or rounded kidney-shaped*, or the uppermost truncate or barely subcordate at the base, both surfaces clothed equally with silky-strigose pubescence; they are from an inch to an inch and a half in diameter, thickish in texture but not fleshy, *three-cleft* to or beyond the middle, but with *the sinuses mostly closed;* the broadly cuneiform *lobes again 2–3-lobed*, or coarsely toothed and incised. The flowers not known. The ripe *carpels* are ovate, *compressed, not margined, apiculate* with a very short and straight subulate style, *smooth and glabrous*, a little more than a line long. The cylindraceous or somewhat club-shaped and papillose receptacle, from which the ripe achenia have fallen, is a quarter of an inch long, and minutely hairy.

It is much to be regretted that all the specimens of this interesting and well-marked species were past flowering, and even the fruit had mostly fallen from the receptacle. The species is probably allied to the curious *R. pinguis*, Hook. f., also an Aucklandian species, on the one hand, as it certainly is to the Tasmanian *R. scapigerus*, Hook., on the other; but it is entirely distinct from both.

* * * * *Novo-Hollandici.*

10. Ranunculus lappaceus, *Smith.*

R. lappaceus, Smith, in Rees Cycl. no. 61; DC. Syst. 1, p. 286; Hook. Jour. Bot. 1, p. 243 (excl. syn. *R. plebeius*, R. Br.?).

Hab. Near Sydney, New Holland.

A species very variable in foliage, with flowers as large as those of *R. acris*, with which it is justly compared by Smith, or of *R. bulbosus*, and of the same deep yellow colour.

11. Ranunculus inundatus, *R. Br. in DC.*

Var. *floribus majoribus; petalis sepala plerumque duplo superantibus.*

Hab. Hunter's River and Woolongong, New Holland (also, Sydney, Bynoe and Wilberforce, Backhouse, in herb. Hook.)

Some specimens appear to have the very small flowers assigned to the species by DeCandolle; in others they are more developed, with *petals a quarter of an inch in length;* and all belong, I doubt not, to Mr. Brown's *Ranunculus inundatus;* these amphibious plants being variable in such respects, according to the conditions under which they grow. The smooth and turgid achenia are abruptly subulate with a very slender and straight style.

* * * * * *Sandwicenses.*

12. Ranunculus Hawaiensis, Sp. Nov.

R. hirsutus; caule valido erecto superne ramoso; pedunculis plurimis corymbosis; foliis biternatisectis divisionibus primariis longe petiolulatis, rameálibus biternatipartitis trisectisve, segmentis omnium cuneato-oblongis lanceolatisve incisis dentatis; sepalis ovatis margine lato hyalino limbatis retusis extus hirsutis petala obovata (flava) subæquantibus; acheniis lævibus late semiovatis compressis stylo conspicuo subulato apice recurvo vel rectiusculo acuminatis in capitulum subglobosum aggregatis.

Hab. Hawaii, Sandwich Islands, in water-runs (also collected by Douglas).

Stems 3 feet or more in height, *erect, thick,* fistulous, terete, branching, clothed, as well as the branches, petioles, &c., with short and spreading *hirsute* pubescence. *Leaves* clothed throughout with a similar pubescence; the radical and principal cauline *biternately compound;* the primary divisions on partial petioles of an inch to 3 inches in length; the *secondary divisions* narrowed at the base into short and usually margined petioles or nearly sessile, *cuneate or oblong,* 2–3-*cleft;* the *lobes oblong or sublanceolate, incised and toothed.* Main petioles dilated and partly sheathing at the base. Upper cauline and rameal leaves simply ternate or trisected, with the divisions laciniate-toothed and incised; the floral commonly undivided and lanceolate. Peduncles an inch or 2 inches long, often somewhat fascicled or umbellate-corymbose on the summit of a common peduncle or branch, forming altogether an ample and many-flowered compound corymb. Flowers smaller than those of *R. acris,* although the fruits are larger. Sepals rather persistent, hairy outside, very concave, thin and membranaceous, somewhat coloured, several-nerved near the centre, ovate-orbicular in outline, including the broad and delicate hyaline margin, retuse at the summit. Petals yellow, obovate, furnished with a conspicuous two-cleft appendage on the short claw, scarcely exceeding the sepals in the later flowers, which the specimens alone furnish. *Achenia 2 lines or more in length*, including the stout and rather conspicuous subulate beak, which is more or less recurved, in shape very broadly *semiovate* or dolabriform, compressed, scarcely margined, smooth, aggregated into a globular head of half an inch in thickness when full-grown.

This coarse and stout, pretty well-marked species may be compared with the Mauritanian *Ranunculus sericeus*, Poir., figured by Delessert; but that has the divisions of the less dissected leaves sessile, much narrower sepals, and an oblong head of smaller and short-pointed carpels. In ours the achenia are remarkably large for the size of the flowers.

13. RANUNCULUS MAUIENSIS, Sp. Nov.

R. parce hirsutus, nunc glabratus; caule ramoso elongato decumbente; ramis in paniculam laxam foliosam diliquescentibus; foliis caulinis trisectis, divisionibus petiolulatis vel sessilibus ovatis bi–tri-lobatis, lobis undique argute serratis subincisis, ramealibus sæpius indivisis ovatis vel oblongis subsessilibus; pedunculis brevibus subsolitariis; floribus parvulis; sepalis ovatis late hyalino-marginatis petala obovata (flava) subæquantibus; acheniis ovatis compressis marginatis lævibus stylo brevi apiculatis in capitulum globosum aggregatis.

HAB. Mountains of West Maui, Sandwich Islands.

Var. *β. foliis caulinis magis divisis, divisionibus longe petiolulatis.*

HAB. Mountains of Kauai, Sandwich Islands.

Stem apparently attaining several feet in length, *slender*, much branched above, *reclining* or ascending, hirsute with a scattered pubescence, in general appearance *nearly glabrous*. *Leaves trisected*, membranaceous, minutely and sparsely hairy, but appearing nearly glabrous; the lower cauline on long petioles; their *divisions ovate*, short-petioled or sessile, 2 or 3 inches long, sharply serrate all round and *more or less incised*, the lateral 2–3-lobed, the middle one trifid. Leaves of the branches sometimes divided, commonly undivided and almost sessile, serrate, ovate or oblong, an inch or two long, and becoming smaller on the ultimate flowering ramifications. Peduncles terminal and dichotomal, an inch long, or less, one-flowered. Flowers (all on a far advanced plant) not larger than those of *R. recurvatus;* the somewhat closed sepals and petals otherwise much as in the preceding species. Mature *achenia only a line long, ovate-lenticular*, compressed, *margined* much as in *R. repens*, smooth, tipped with a small, straight or somewhat recurved, *abrupt, subulate beak*, consisting of the persistent style. They form a globose head of only a quarter of an inch in diameter.—This description is from the Maui specimen. The poor specimen from the island of Kauai, indicated as a variety, is more hairy; the cauline leaves more dissected, and the divisions on elongated partial petioles; in these respects approaching the *R. Hawaiensis*, although very different in the fruit, &c.

This species is readily distinguished from the preceding by its weaker, reclining habit, less divided and much less hairy leaves, smaller flowers, and, more definitely, by its carpels of less than half the size, of a different shape, and abruptly tipped with a small and short style, instead tapering gradually into a conspicuous beak. In the fruit, as well as the foliage, it bears more resemblance to some of the coarser North American forms of the polymorphous *R. repens*, from which the small flowers with short petals should distinguish it.

4. CALTHA, *Linn.*

1. CALTHA SAGITTATA, *Cav.*

Caltha sagittata, Cav. Ic. 5, t. 414; DC. Syst. 1, p. 307; Hook. f. in Bot. Mag., t. 4056, & Fl. Antarc. p. 228.
C. multicapsularis, Soland. in herb. Banks; Forst. in Trans. Linn. Soc. 8, p. 324.
Psychrophila sagittata & *P. andicola*, C. Gay, Fl. Chil. 1, p. 50, t. 2.

HAB. Orange Harbour, Fuegia.

This curious and widely distributed Antarctic American species is more closely allied to true *Caltha*, as Dr. Hooker remarks, than to *C. appendiculata*.

5. PSYCHROPHILA.

Sepala 5, crassiuscula, appendice membranacea caudato-attenuata vel obtusa brevi aucta, marcescentia, persistentia. Petala nulla. Stamina 5–9. *Ovaria* 2–9, *pauci-*(2–8-)*ovulata. Folliculi* 2–3-*sperma. Semina pendula.—Herbæ nanæ, cæspitosæ, caudicibus petiolorum vaginis latissimis scariosis obtectis, lamina foliorum 2–3-loba crassa, basi intus appendicibus binis sursum erectis appressis instructa; pedunculo brevissimo unifloro; floribus subdioicis.*

Caltha, § Psychrophila, DC. Syst. 1, p. 307, excl. sp.; Hook. f. Fl. Antarc. p. 228.
Psychrophila, C. Gay, Fl. Chil. 1, p. 47, excl. char. & sp. 2–3.

Distinguished from Caltha as a genus by the *membranaceous appendages* which terminate the thickish sepals, either attenuated and as it were caudate, as in *P. appendiculata*, or short and blunt as in *P. dioneæfolia;* by the *few stamens* (from 5 to 9); and the few (2 to 9) and 2–8-*ovulate ovaries*, and 2–3-*seeded follicles;* the *subdiœcious* flowers; and the very different habit. It must be confessed, however, that the New Zealand species of *Caltha*, recently illustrated by Dr. Hooker, having narrow and attenuated sepals, is too nearly intermediate for the satisfactory discrimination of the two genera. Of the curious internal appendage of the leaves, adnate to the base of the blade, we have indeed an approach in the inflexed auricles of *Caltha sagittata*. This appendage is doubtless of the same nature as that on the inner face of the petals of *Erythroxylum*, and of certain *Sapindaceæ*.

1. Psychrophila appendiculata, *Gay, l. c.*

Caltha appendiculata, Pers. Ench. 2, p. 107; DC. Syst. 1, p. 307; Deless. Ic. Sel. 1, t. 43; Hook. f. Fl. Antarc. p. 228.
C. paradoxa, Solander, in herb. Banks.; Forst. in Linn. Trans. 8, p. 324.

Hab. Orange Harbour, Fuegia.

2. PSYCHROPHILA DIONEÆFOLIA, *Gay, l. c.*

Caltha (Psychrophila) dioneæfolia, Hook. f. in Lond. Jour. Bot. 2, p. 306, & Fl. Antarc. p. 229, 284.

HAB. Orange Harbour, Fuegia.

Very striking, although on a diminutive scale, is the resemblance between the blade of the leaf of this curious little plant and that of our *American Flytrap*, the *Dionæa muscipula*. Dr. Hooker's account and admirable figure of this species leave nothing to be added, except the fruit. Of this one or two of our specimens show the vestiges, in the three dehiscent, empty follicles. These were short and broad, ovate, slightly pointed, not very different from those of *P. appendiculata*, and had evidently borne only two seeds at most. Dr. Hooker informs us that a small specimen of this plant was brought home by Forster, mixed with *Oxalis Magellanica*, although not described by him; and moreover that, "in the southern parts of Tierra del Fuego it is a very common plant, covering large tracts of ground with a carpet of deep but shining green, upon which the stellate flowers have a very pretty appearance."

ORD. DILLENIACEÆ.

1. DAVILLA, *Vand., DC.*

1. DAVILLA RUGOSA, *Poir.*

Davilla rugosa, Poir. Dict. Suppl. 2, p. 457; St. Hil. Fl. Bras. Mer. 1, p. 18.
D. Brasiliana, DC. Syst. 1, p. 405, & Prodr. 1, p. 69; Deless. Ic. Sel. 1, t. 71.

HAB. In forests, near Rio Janeiro; where it is apparently common, as it is gathered by most collectors.

2. CAPELLIA, *Blume.*

CAPELLENIA, Hasskarl, in Flora (Allgem. Bot. Zeit. Regensb.) 1847, p. 659 (nom. emend.).

1. CAPELLIA BIFLORA, Sp. Nov. (Tab. 1.)

C. foliis ovato-oblongis repando-serratis acutis obtusisve subcoriaceis confertim recte-venosis, basi stipuliformi petiolum utrinque latissime marginante mox sursum dissiliente; pedunculis bifloris; ovariis 12.

HAB. Ovolau, Feejee Islands.

Tree about twenty feet in height; the branchlets glabrous, or clothed when young with a fine deciduous pubescence, minutely verrucose, annulate by the scars whence the sheathing bases of the stipuliform wings of the petiole have fallen. *Leaves* alternate, rather coriaceous, *ovate-oblong* or oval, acutish, not acuminate, from 5 to

8 inches long in the specimens, *repandly serrate* with small teeth, glabrous, or minutely pubescent underneath when young, *prominently straight-veined*, in the manner of a Chestnut leaf, the *veins* or ribs *rather close*, about 20 on each side, connected by a reticulation of minute transverse veinlets. Petioles an inch or two in length, thick, dilated at the base, *winged* for their whole length by a decurrent prolongation of the lamina, or rather, *by a pair of wholly adnate stipules*. These sheath the apex of the stem and enclose the bud in gemmation (there are no bud-scales); the clasping insertion separates by a clean scar soon after the leaf expands, and the line of separation extends from below upwards, cutting these stipular wings away from the petiole, and at length they break away from the lamina, to which they are united by an obversely wedge-shaped apex, adapted to a narrow sinus of the blade itself. Peduncles solitary, terminal, becoming lateral and opposite the leaves by the continuation of the stem, pubescent, longer than the petiole, usually *two-flowered*, sometimes one-flowered, the apex articulated with the flower. Sepals 5, orbicular, coriaceous, glabrous, or the exterior minutely puberulent outside, strongly imbricated in æstivation, persistent. Petals 5 (in the bud obovate), "white," deciduous. Stamens indefinite, inserted in several series into the dilated base of a thickened torus, the exterior shorter: anthers linear, longer than the filaments, adnate (introrse?), the inner successively longer and recurving over the outer series. Ovaries 12 (or sometimes 10?), uniserial, united by the greater part of the length of the ventral face to a thickened central prolongation of the axis. Styles terminal, distinct, long and filiform, erect with the upper part recurved, persistent. Stigma strictly terminal, emarginate. Ovules 10 or 12 in each ovary, occupying nearly the whole length of the ventral suture, in a double row, horizontal, on short and thick funiculi, globose-pyriform. Mature fruit unknown. Immature and partly grown fruit a ring of 12, apparently follicular, ovate-oblong, compressed carpels, coalescent by their narrow ventral face only, for half their length or more, to the thickened but dry axis, several-seeded. Arillus none? The fully expanded flower would probably measure about two inches in diameter.

The genus *Capellia* was proposed by Blume (in his "Bijdragen tot de Flora van Nederlandsch Indie," Part 1, p. 5), in 1825, for a tree found in the mountains of the Island of Nusa Kambanga. I am not aware any fuller description of it has appeared, or that any other species have since been published (except the doubtful *C.? pauciflora*, Zoll. & Moritz., from Java), although to the same genus undoubtedly belongs No. 329 of Lobb's collection at Singapore, in 1846, as is noted by Planchon, in the Hookerian herbarium, as well as the two species here characterized. The fruit of these Feejeean plants unfortunately was not collected; but the half-grown carpels of the present species plainly indicate a capsular fruit. As the genus has not been figured, I devote a plate to its illustration, even from our imperfect materials. The anthers, unfortunately, in all the flowers I could examine, had been in a good degree destroyed by larvæ. I think they open longitudinally; while in the plant from Singapore, above-mentioned, the cells open only at the top, by a pore or short slit.*

PLATE 1.—CAPELLIA BIFLORA: a branch in flower. Fig. 1. Vertical section of an unopened flower. 2. A petal. 3. A separate stamen, enlarged. 4. The pistils divided transversely, moderately magnified. 5. One of the pistils detached from the fleshy central axis, its ovary longitudinally divided, more magnified. 6. Longitudinal section of the half-grown fruit; one of the carpels laid open, to show the young seeds, moderately enlarged.

2. CAPELLIA MEMBRANIFOLIA, Sp. Nov.

C. foliis oblongis obovato-oblongisve repando-serratis membranaceis recte-venosis costis subdistantibus; pedunculis bi–tri-floris; floribus parvulis; ovariis 8–10.

HAB. Ovolau, Feejee Islands.

Of this we have only a single specimen, bearing one or two flower-buds, which, so far as I can see, differs from the last principally in its

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* While this sheet was in type I have received, through Prof. Miquel, specimens of the original *Capellia multiflora*, from Java. It bears a close general resemblance to the present species, from which, however, it is clearly distinguished by the very narrow wings or margins of the petiole, which do not wholly clasp the stem at the insertion, as well as by the more numerous flowers and fewer ovaries. A few of the innermost anthers are abruptly very much longer than the others, as described by Blume. The anthers open only by two pores at the apex.

thinner, membranaceous leaves (9 inches, or more in length), *with fewer and more distant primary veins*, in its perhaps *several-flowered peduncles* (though I have noticed only three), and in the flowers being to all appearance only half as large, and with rather fewer ovaries. I think that the axis of the united pistils is not so much thickened. The stamens of the flower-bud examined are in good condition. The exterior are shorter, and perhaps imperfect. The others are successively longer and more recurved: anthers oblong-linear and linear, shorter than the filaments, adnate-introrse; the cells opening longitudinally down the margin apparently for their whole length;—characters which would refer these Feejeean plants to *Dillenia*, if the fruit would permit. To the same species I doubtfully refer a sterile branch, with the thin leaves a foot and a half long. Perhaps these are all mere varieties of the foregoing.

From Caldera, Mindanao, we have foliage of one or perhaps two apparently allied *Dilleniaceæ*, in an undeterminable condition: and from Luzon (near Manilla), a single leafy specimen of what may be *Wormia apetala*, Gaud.

3. ADRASTEA, *DC.*

Sepala 5, persistentia, oblonga, subulato-acuminata, marginibus membranaceis petaloideis. Petala 5, ovalia, calyce breviora, caduca. Stamina 10, æqualia, conformia, persistentia: antheræ oblongæ, apice emarginatæ, filamento plano longiores, loculis longitudinaliter subintrorsum dehiscentibus. Ovaria 2, distincta, conica, in stylum subulatum attenuata: stigma terminale minutissima. Ovulum unicum, e basi suturæ ventralis adscendens, anatropum. Folliculi membranacei, intus longitudinaliter dehiscentes. Semen erectum, ovoideum, læve, ad hilum arillo brevissimo scarioso appendiculatum.—Suffrutex linearifolius, floribus flavis.

Adrastea, DC. Syst. 1, p. 424, & Prodr. 1, p. 73; Endl. Gen. no. 4752.

1. Adrastea salicifolia, *DC. l. c.*

Hab. Near Sydney, New South Wales.

Stems a foot high from a creeping base, erect or ascending, slender, cinereous-puberulent, soon glabrous. Leaves linear and oblong-linear, an inch or an inch and a half in length, obtuse, mucronate, the revolute margins sparingly and obsoletely callose-denticulate above the middle, veinless; the midrib conspicuous; the upper surface glabrous; the lower, like the short petioles and young branchlets, canescent with a soft silky pubescence. Flowers solitary and subsessile at the extremity of short leafy branchlets, small. Sepals 3 lines long, imbricated in æstivation, persistent, a thickish carinate axis silky-pubescent externally, and produced at the apex into a subulate or subaristate acumination, the rest membranaceous and partly petaloid, yellowish. Petals 5, imbricated in æstivation, oval, yellow, rather shorter than the calyx, early deciduous. Stamens 10, about as long as the petals, persistent, equal in length, and symmetrically arranged. Filaments shorter than the anthers, flat. Anthers elongated-oblong, emarginate at the apex; the cells somewhat separated by the rather broad and flat connective, opening longitudinally by a slightly introrse line. Ovaries 2, distinct, erect, somewhat obcompressed, conical, tapering regularly into a short, subulate, and very acute style: stigma terminal, simple, very minute. Ovule solitary, ascending from the base of the ventral suture, on a very short funiculus, obovoid, anatropous. Fruit of 2 thin and membranaceous follicles, shorter than the persistent calyx, pointed with the persistent style, dehiscent by the ventral suture, one-seeded. Seed filling the lower part of the follicle, ovoid, with a smooth testa, and with a minute, thin, and scarious, orbicular arillus, or rather a caruncle, which is apparently attached to the micropyle.

I am not aware that anything has appeared respecting this plant since it was characterized by DeCandolle, thirty-five years ago, from specimens he examined in the Lambertian herbarium. I have therefore confirmed and completed the character (which was left in some respects imperfect by DeCandolle), from the specimens collected in the Exploring Expedition. This was the more necessary since the alterations made by Endlicher (I know not whether from actual materials), viz., "capsulæ coriaceæ," and "arillo membranaceo," do not accord with the plant before me. For the carpels are membranaceous, as said by DeCandolle, and the arillus, if such it be, is almost obsolete.

4. HIBBERTIA, *Andr., DC.*

1. Hibbertia volubilis, *Andr.*

Hibbertia volubilis, Andr. Bot. Rep. t. 126; Salisb. Parad. Lond. No. 73; DC. Syst. 1, p. 426.
Dillenia volubilis, Vent. Choix. Plant. p. 11, t. 11; Pers. Ench. 2, p. 72.
D. speciosa, Curt. Bot. Mag. t. 449, excl. syn.

Hab. Near Sydney, New South Wales, apparently very common.

2. Hibbertia dentata, *R. Br.*

Hibbertia dentata, R. Br. in DC. Syst. 1, p. 426, & Prodr. 1, p. 74; Bot. Reg. t. 282; Bot. Cab. t. 347; Bot. Mag. t. 2338.

Hab. With the preceding.

3. Hibbertia linearis, *R. Br. l. c. &.*

Var. β. obtusifolia: *foliis latioribus obtusis; cæt. ut in forma typica.*

Hibbertia obtusifolia, DC. Syst. 1, p. 429, & Prodr. 1, p. 75, ex. char.

Hab. Port Jackson and Sydney, New South Wales (α and β).

The variety, which differs from the ordinary form of the species only in the broader and obtuser leaves, well accords with the character of *H. obtusifolia*, DC.

4. Hibbertia diffusa, *R. Br.*

H. humilis, ramosissima; ramulis puberulis; foliis cuneatis spathulatisve emarginatis apicem versus 2–5-dentatis nunc integris calycibusque glabris; caulibus diffusis.

Hibbertia diffusa, R. Br. in DC. Syst. 1, p. 429, & Prodr. 1, p. 74.

Var. β. oblongata (DC. l. c.): *foliis oblongo-cuneatis seu oblanceolatis sæpius integris cinereo-puberulis vel glabratis; ramis suberectis.*

Var.? γ. CANESCENS: *foliis spathulatis oblanceolatisve integerrimis emarginatis utrinque cinereo-pubescentibus; sepalis extimis dorso puberulis; floribus paullo majoribus.*

Hibbertia canescens, Planchon, in Herb. Hook., non Sieb. ex. char.

HAB. Sydney, New South Wales. Var. β, Puen Buen; and γ, Hunter's River, New South Wales.

The stems of the typical *H. diffusa* are about a span high, from a thickened woody base, *very diffuse;* the branchlets minutely pubescent. The *leaves* are wholly *glabrous*, except the very youngest, quite variable in size and form; the larger an inch long and half an inch wide, *dilated-cuneiform*, tapering into a narrow base, emargiuate, and mostly coarsely and obtusely *2–5-toothed* towards the summit; others are *narrowly spatulate, or cuneate*, half an inch or less long, only one or two lines wide, and usually entire. *Sepals glabrous*, or nearly so. Ovaries glabrous.—What I refer to var. β has rather more upright branches, which, like the narrower and sometimes oblanceolate, or lanceolate, mostly entire leaves, &c., are clothed with a fine *cinereous, but more or less deciduous pubescence.* This is no doubt a mere variety of *H. diffusa*. But it runs into the var. γ, which is stouter and more upright, with rather larger flowers; the *leaves all entire, oblanceolate or narrowly cuneiform-spatulate*, and clothed with a more *cinereous pubescence*, which is tardily somewhat deciduous. There is no difference in the flowers, except that the exterior sepals are more or less pubescent outside. It has been gathered by Dr. Hooker and others around Sydney, and is named *H. canescens*, Sieb., in the Hookerian herbarium: but that species is characterized as having pubescent ovaries, and leaves pilose above and glabrous underneath.

5. HIBBERTIA FASCICULATA, *R. Br. l. c.*

HAB. Sydney, New South Wales.

6. HIBBERTIA CAMPHOROSMA.

H. pilosula; foliis subulato-filiformibus fasciculatis brevibus quam *flores vix longioribus; staminibus* 9–10; *carpellis* 3 *dispermis; caule diffuso.*

Pleurandra Camphorosma, Sieb. in Spreng. Syst. Veg. Cur. Post. p. 191.

HAB. Sydney, New South Wales.

A shrubby plant, a foot or less in height, with numerous, *diffuse* and spreading branches; the *branchlets minutely hairy. Leaves subulate-filiform*, obtuse, narrowed at the base, mostly *fascicled*, minutely hairy, at length nearly glabrous, about a quarter or one third of an inch long; those next the flowers scarcely longer than the calyx. Flowers terminal, or terminating very short branchlets, thus appearing lateral, not pedunculate. Sepals mucronate-cuspidate, shorter than the dilated-obovate petals. *Stamens* 9 *or* 10 in three clusters alternate with the three ovaries, usually four in one cluster and three in each of the others: filaments distinct, longer than the oval anthers. *Carpels* 3, glabrous, ovoid, *two-seeded*. Seeds ovoid; the base surrounded with a small hyaline and much laciniated arillus.

This species is very closely allied to *H. fasciculata;* from which it principally, and perhaps too slightly, differs in its more diffuse habit, rather smaller flowers, and shorter leaves; those of *H. fasciculata* being from half an inch to an inch long, and much exceeding the flowers. Both appear to be common around Sydney.

5. PLEURANDRA, *Labill.*

1. PLEURANDRA SCABRA, *R. Br.*

Pleurandra scabra, R. Br. in DC. Syst. 1, p. 419, & Prodr. 1, p. 72.

Var. *β. foliis oblongo-ovalibus vel obovatis; ramis diffusioribus; ramulis angulatis fere glabris.*

HAB. Sydney, New South Wales.

We have both the var. *β*, which has more diffuse or spreading branches, and smoother as well as broader, oblong-oval or obovate leaves; and the typical form, with narrowly oblong or sublinear leaves, more narrowed at the base. In the Hookerian herbarium it is named *P. parviflora* (from Sydney, Dr. Hooker, and Bass's Straits, Mr. Bynoe); but it has no stellate pubescence. The upper surface is scabrous with short, hispid hairs, which leave a broad base or scar when they fall away.

2. PLEURANDRA ACICULARIS, *Labill.*

Pleurandra acicularis, Labill. Fl. Nov. Holl. 2, p. 6, t. 144; DC. Syst. 1, p. 421, & Prodr. 1, p. 73.

HAB. Sydney, New South Wales.

The specimens accord with Labillardiere's figure. My Tasmanian specimens from Mr. Gunn have shorter and more crowded leaves.

3. PLEURANDRA STRICTA, *R. Br., in DC. l. c.*

HAB. Port Jackson, New South Wales (where Mr. Brown first gathered it).

Ord. MAGNOLIACEÆ.

1. DRYMIS, *Forst.*

1. Drymis Winteri, *Forst.*

Drymis Winteri, Forst. Char. Gen. p. 84, t. 42; Linn. f. Suppl. p. 269; Mill. Fasc. Ic.; DC. Syst. 1, p. 442; Hook. f. Fl. Antarc. p. 229.
D. punctata, Lam. Dict. 2, p. 230, & Ill. Gen. t. 494.
Winterana aromatica, Soland. in Med. Obs. 5, p. 46, t. 1.
Wintera aromatica, Murr. Syst. p. 507; Humb. & Bonpl. Pl. Æquinoct. 1, p. 209.

Hab. Orange Harbour, Fuegia.

Var. Chilensis. (*Forma angustifolia, nempe foliis oblongo-lanceolatis.*)

D. Chilensis, DC. Syst. 1, p. 444, & Prodr. 1, p. 78; Deless. Ic. Sel. 1, t. 83; Gay, Fl. Chil. 1, p. 61.

Hab. Chili, near Valparaiso, in deep ravines.

The full accounts that have been given of the well-known Winter's Bark leave nothing to be added here. Our specimen from Valparaiso belongs to a state with *unusually narrow, oblong-lanceolate leaves.* I see little to militate against Dr. Hooker's conclusion respecting the species, at least so far as respects DeCandolle's *D. Chilensis.* But that the same species should extend from Fuegia and Juan Fernandez to New Granada, and even to Mexico, over 86° of latitude, is indeed remarkable; especially when we consider that all other species of *Magnoliaceæ* have a narrow geographical range.

ORD. ANONACEÆ.

1. ANONA, *Linn.*

1. ANONA PALUSTRIS, *Linn.*

Anona palustris, Linn. Spec. ed. 2, p. 757? St. Hil. Fl. Bras. Mer. 1, p. 32; Mart. Anonac. Fl. Bras. p. 11.
A. Americana, etc. Pluk. Alm. t. 135, f. 1.

HAB. Near Rio Janeiro, Brazil: abundant in the Mangrove swamps.

I have not at present the means of comparing the Brazilian and West Indian specimens of the *Alligator-apple, Monkey-apple,* or *Cork-wood*, as it is variously called; but our specimens evidently belong to what the learned Von Martius takes for *Anona palustris*, and have nearly membranaceous leaves, in shape like those of the Pear, as he describes them.

2. ANONA SQUAMOSA, *Linn., Mart. l. c.*

HAB. St. Jago, Cape de Verde Islands; introduced. Dr. Pickering records it, as an introduced tree, at the Society, Navigator, and Tonga Islands.

The *Sour-sop* or *Guanabo*, a West Indian species, is now widely diffused throughout the tropics. For an admirable historical account of the cultivated species, vide Martius, Adnotationes de Historia Anonarum Cultarum, in his Flora Brasiliensis, l. c.

3. Anona cherimolia, *Mill., Mart. l. c.*

Hab. Lima: cultivated. "A native in the ravines to the northward."

A sterile shoot, with broader leaves than ordinary, of the well-known *Cherimoya*, the fruit of which is so much prized in Peru; and which is ranked as one of the three best fruits in the world.

2. ROLLINIA, *St. Hil.*

1. Rollinia longifolia, *St. Hil.*

Rollinia longifolia, St. Hil. Fl. Bras. 1, p. 29, t. 5; Mart. Anonac. Fl. Bras. p. 17.
Anona dolabripetala, Raddi, Act. Soc. Mod. 16, p. 15; DC. Prodr. 1, p. 86.
A. xestropetala, Spreng. Syst. 2, p. 641, fide Mart.

Hab. Near Rio Janeiro, Brazil.

2. Rollinia parviflora, *St. Hil.*

Rollinia parviflora, St. Hil. Fl. Bras. Mer. l. c.; Mart. Anonac. l. c. p. 19, t. 6, f. 1.

Hab. Near Rio Janeiro. (A form intermediate between var. α and β, of Martius.)

3. GUATTERIA, *Ruiz & Pav.*

1. Guatteria psilopus, *Mart.*

Guatteria psilopus, Mart. Anonac. Fl. Bras. p. 27, t. 7, f. 1.

Hab. Organ Mountains, Brazil, in the vicinity of Rio Janeiro.

2. Guatteria pallida, *Blume?*

Guatteria pallida, Blume, Bijdr. p. 20, & Fl. Jav. Anonac. p. 97, t. 48.

Hab. Baños, near Manilla, Luzon.

A poor specimen, with young fruit, destitute of flowers, which I can only doubtfully refer to Blume's *G. pallida*, with the figure of which it pretty well accords.

4. ANAXAGOREA, *St. Hil.*

1. Anaxagorea Luzonensis, Sp. Nov.

A. foliis lanceolato-oblongis utrinque angustatis promisse acuminatis concoloribus; staminibus conformibus; ovariis 3 lævibus in stylum gracilem attenuatis; folliculis longe clavato-stipitatis.

Hab. Mountains near Baños, in the Island of Luzon. (Also in Cuming's Philippine collection, No. 831.)

Branches slender, glabrous, as is the whole plant. *Leaves* membranaceous, from 3 to 5 inches in length, *lanceolate-oblong*, or oblong, narrowed into an acute base, *conspicuously acuminate*, *green both sides*, not at all glaucescent underneath: petioles about 3 lines long. Peduncles opposite the leaves, 2, or in fruit 3, lines in length, one-flowered, furnished with a very small clasping bractlet near the apex. Calyx of 3 ovate and obtuse sepals, united at the base, minutely ciliolate, otherwise glabrous, about one-third the length of the corolla. Petals lanceolate-oblong, the 3 outer ones about half an inch long; the 3 inner a little smaller. Torus not at all enlarged. *Stamens* about 30, *equal and similar*, all perfect and with short filaments: anthers linear, with a short obtuse tip, three or four times the length of the filament. *Pistils* 3, slightly stipitate in the flower-bud, *smooth* throughout; *ovary* ovoid-oblong, *tapering into* *a style* as long as itself: stigma obtuse, little dilated, not discoid. Ovules 2, collateral, erect from the base of the cell. *Follicles* 2 to 3, or solitary, gibbous, minutely wrinkled or roughened, tipped with a persistent style, which is a line and a half long, *tapering gradually into the smooth and thickened stipe*, the whole together *club-shaped*, and over an inch long, two-valved at the apex; the valves thickened, corticose-coriaceous, at length splitting through the clavate-thickened stipe. Seed often by abortion solitary, oval, compressed; the testa chestnut-coloured, smooth and shining.

This species, which appears to be a true *Anaxagorea*, notwithstanding the extreme fewness of its pistils, differs from *A. Javanica* of Blume in its narrower leaves, not at all glaucous beneath, in its slender styles, and especially in its uniform, wholly perfect stamens; in which last respect it accords with the genuine American species. Our specimens exhibited good fruit; but there was only a single unopened flower to examine.

5. RICHELLA, Nov. Gen.

Calyx subtrilobus, persistens. Corolla e petalis 6 *ovatis, internis dimidio brevioribus. Torus acetabuliformis. Stamina indefinita* Guatteriæ, *etc. Ovaria plurima, libera, biovulata: styli majusculi, intus longitudinaliter stigmatosi. Ovula suturæ ventrali juxta basim inserta, adscendentia, superposita. Fructus e carpellis paucis, obovoideis, subcarnosis (exsuccis, siccatis coriaceis), indehiscentibus, breviter stipitatis, monospermis. Semen erectum, magnum, samaroideo-nuciforme; nempe, testa coriacea marginibus alato-productis. Albumen, embryo, etc. ordinis. Arbor* Uvariæ *faciæ.*

1. RICHELLA MONOSPERMA, Sp. Nov. (Tab. 2).

HAB. Ovolau, Feejee Islands; not uncommon.

A *tree* of considerable size, with glabrous leaves, branches, &c., and *with the aspect of an Uvaria.* Leaves coriaceo-membranaceous, elliptical or oblong, obtuse or rounded at the base, the apex usually with a short acumination, feather-veined (the principal veins slender) and minutely reticulated, from 5 to 9 inches long, and 2 or 3 wide; the midrib minutely verrucose-roughened underneath. Petioles half an inch long. Peduncles solitary, axillary or opposite the leaves, naked, an inch or more in length, one-flowered. *Calyx* small, expanded, *slightly three-lobed, persistent. Corolla of* 6 *petals* in two distinct series, thick and coriaceous in the dried specimen, minutely silky-pubescent, deciduous; the three exterior spreading, *ovate*, subacuminate, two-thirds of an inch in length; the three *inner* similar in shape but *only half the size*, more tardily opening, not spreading. *Stamens very numerous*, crowded, in many ranks, occupying the thickened annular margin of the *saucer-shaped torus:* filaments very short; the large connective tipped with the truncate thickened apex which is common in this family: anther-cells linear, extrorse, opening longitudinally. *Pistils numerous* (about 20), inserted on the concave-depressed centre of the dilated torus: ovaries minutely hairy, linear-oblong, angled, about the length of the stamens, abruptly contracted into a *linear, thickish style*, which is as long as the ovary itself, and canaliculate and *stigmatose for nearly the whole length of its internal face. Ovules* 2, *inserted* close together, but *one above the other, on the ventral suture, very near the base* of the cell, obcompressed, ascending. *Fruit* of few (in the specimen 3) *ripened carpels* from one flower: these are coriaceous, but were probably fleshy in the living plant, *obovate*, obtuse, contracted at the base into a short and thick stipe, and *indehiscent*, at least, showing no indications of dehiscence: they are an inch and a half long and an inch in thickness, and have rather thin walls. *Seed solitary, erect*, fully an inch long and almost as wide, as long and as broad as the cell, oval or obovate in outline, almost flat on one face, the other angled in the middle, so that the transverse section is triangular, the margins of the smooth, coriaceo-crustaceous (chestnut-coloured) *testa produced all round into a sharp, salient, wing-like edge*, which is notched on one side at the base: the hilum small, next the base on the angled face. Albumen very oily, ruminated in the manner of the family. Embryo minute, with oblong cotyledons and a slender radicle.

The name *Richea* being preoccupied, I trust I may be permitted somewhat to modify and prolong it, in order to dedicate this well-marked genus to William Rich, Esq., the Botanist of the Expedition in which these collections were made. According to Blume's arrangement of the family, this genus would stand next to his *Polyalthia*, from which it is at once distinguished, as from all the others, by its remarkable winged seed.

PLATE 2.—RICHELLA MONOSPERMA: in fruit. Fig. 1. A flower, of the natural size. 2. Vertical section of the receptacle, with the stamens and pistils, enlarged. 3. A stamen, magnified. 4. A pistil, with the ovary vertically divided to show the two superposed ovules, magnified. 5. Fruit and enclosed seed, divided transversely, of the natural size. 6. Back view of a detached seed, of the natural size. 7. Same, seen from the other side, and divided transversely. 8. The same, longitudinally divided, showing the embryo. 9. Embryo detached and magnified.

6. UVARIA, *Linn.*

1. UVARIA ODORATA, *Lam.*

Uvaria odorata, Lam. Dict. 1, p. 595, & Ill. t. 495, f. 1; Blume, Fl. Jav. Anonac. p. 29, t. 9, & 14, B.; Decaisne, Herb. Timor. p. 94.
Unona odorata, Dunal, Anonac. p. 108; DC. Syst. 1, p. 492, & Prodr. 1, p. 90.
U. leptopetala, DC. Syst. 1, p. 496; Deless. Ic. Sel. 1, t. 88.
U. ligularis, Dunal, l. c.? DC. l. c.? & *Uvaria ligularis*, Lam.?
Cananga, &c. Rumph. Herb. Amboin. t. 65 (& 66?).

HAB. Samoan or Navigators' Islands; at Savaii, &c.

That this is the *Uvaria odorata* I cannot doubt, although the peduncles incline to branch, and to bear a larger number of flowers than is usually attributed to that species; on which account, as I find no other difference of moment in the character, I suspect that *U. ligularis*, Lam. is no more than a variety. The petals are remarkably long and narrow. The fruit, that of an *Uvaria*, is ovoid, and about the size of a small cultivated cherry; and the flat seeds are minutely porose-pitted, as described and figured by Blume. I do not know whether the flowers were noticed to be agreeably fragrant, and whether they are used to scent the cocoa-nut oil which the Samoans apply to their hair; as they are used, according to Blume, in the Malayan and Moluccan Islands. The tree is said to attain the height of 60 or 70 feet, and its wood to be considerably valued as timber.

2. Uvaria amygdalina, Sp. Nov.

U. glabra, foliis oblongo-lanceolatis acuminatis basi sinu parvo subcordatis breviter petiolatis fere membranaceis supra nitidis reticulatis, venis omnibus tenuibus; pedunculis brevibus unifloris; fructibus ovoideo-globosis obtuse apiculatis in gynophorum sessilibus oligospermis.

Hab. Ovolau, Feejee Islands.

A tree; its size not recorded. Branches slender, with a minutely rimose or somewhat verrucose bark, *glabrous*. *Leaves* 5 or 6 inches long, by an inch and a half in width, *oblong-lanceolate*, *acuminate*, a little narrowed towards the base, which is *subcordate*, *with a small and narrow sinus*, *rather thin in texture*, *coriaceo-membranaceous*, glabrous, the *upper surface shining*, but both surfaces of the same green colour, *reticulated with slender veins*, of which the principal ones are scarcely larger than the veinlets; the midrib minutely verrucose-roughened underneath. Petiole little more than a line long. Flowers not seen. Fructiferous *peduncle* half an inch long, axillary, *one-flowered*, at the apex bearing the vestiges of the calyx; above which the torus is immediately dilated into a globular gynophore, bearing 8 or 9 fleshy *carpels*. These in an unripe state, but some of them apparently full-grown, are half or two-thirds of an inch long, *sessile on the gynophore*, *globose-ovoid*, *with a short obtuse point*, containing a *few* (from 5 to 8) rather large and flat horizontal *seeds*. Albumen deeply ruminated, as in the order.

This species, having the carpels sessile on the receptacle, belongs to the section *Asimina*, as the genus is disposed by Blume. Judging from the figures of Blume's three Javanese species of this section, and from an arillus having been noticed by Martius in *U. Brasiliensis*, I fear it will be hardly possible to maintain *Asimina* as a genus.

A leafy branch apparently of a second species exists in the Feejeean collection, but without flowers or fruit.

ORD. MYRISTICACEÆ.

1. MYRISTICA, *Linn.*

1. MYRISTICA CASTANEÆFOLIA, Sp. Nov.

M. foliis oblongis seu oblongo-lanceolatis sensim acutis basi rotundatis glabris subtus albidis multicostatis; floribus axillaribus, masculis amentaceo-spicatis, rhachi incrassata sæpius furcata deflexa; fructu subsessili oblongo tomentuloso.

HAB. Ovolau, Feejee Islands, on mountains; common.

A middle-sized tree. Branchlets thick, with a rough and wrinkled bark, glabrous; the youngest parts barely ferrugineous-puberulent. *Leaves oblong* and *oblong-lanceolate*, large, from 8 or 10 inches to a foot in length, and 3 or 4 inches wide, of a thick coriaceous texture, *rounded at the base*, toward the apex usually tapering gradually to a more or less acute point, *glabrous*, even when young, conspicuously feather-veined with 20 to 30 pairs of straight and simple ribs, which are rather prominent underneath, anastomosing near the margin, connected with somewhat conspicuous transverse veinlets, green above, *whitish underneath*. Petiole thick and stout, an inch or an inch and a half long. *Flowers axillary*, or slightly supra-axillary; the fertile not seen; the *sterile spicate on a thickened rhachis*, so as apparently to form a kind of *ament*. At least, the specimens (which are in an advanced state) exhibit stout and lignescent deflexed spines, or rhachises, solitary in the axils of the leaves, or above leaf-scars, or some of them apparently supra-axillary, simple or oftener *forked*, an inch or less in length and over 2 lines in thickness, squarrose with strong scars which mark the insertion of bracts, and apparently of sessile flowers also, which must have been closely imbricated. At their apex remain three or four compacted sessile flower-buds, each subtended by an ovate bract; the bracts and three-cleft? perianth coriaceous, ferrugineous-pubescent outside. Andrœcium composed of 8 or 10 nearly sessile and linear anthers, which are closely united with each other and with a central axis. *Fruit nearly sessile*, solitary, axillary, *oblong*, obtuse, with a minute and oblique apiculation, an inch and a quarter long, *minutely tomentose* with a ferrugineous pubescence, apparently splitting into two valves at maturity. Seed an inch long, ovoid-oblong, conformed to the pericarp.

2. Myristica macrophylla, Sp. Nov.

M. foliis (bipedalibus et ultra) obovato-oblongis basi angustatis glabris multicostatis subtus albidis, venulis inconspicuis.

Hab. Ovolau, Feejee Islands; on mountains.

This is mentioned in Dr. Pickering's MSS. notes as a smaller tree than the foregoing, but with the leaves sometimes 2½ *feet long*. In the specimen, which is unfortunately destitute both of flowers and fruit, the leaves are over 2 feet in length, and of a different shape from those of the preceding species, being *nearly obovate*, and *tapering* gradually from above the middle *to the acute base*; the summit scarcely acute. The ribs or straight veins are about 35 pairs, and very prominent underneath; but the transverse veinlets are scarcely visible on the smooth, but whitish lower surface.

3. Myristica hypargyræa, Sp. Nov.

M. foliis oblongis basi obtusis glabris pluricostatis subtus argentato-albidis; floribus axillaribus in pedunculum brevem seu brevissimum glomeratis, masculis breviter pedicellatis; fructu ovoideo-subgloboso tomentuloso.

Hab. Tutuila and Savaii, Samoan or Navigators' Islands; in deep woods. Also at Tongatabu.

"A middle-sized tree, with large leaves; the fruit of the size of a peach, and more woolly." Branchlets as in No. 1, but less stout, and smoother. *Leaves oblong*, or the larger lanceolate-oblong, 8 to 15 inches long and from 4 to 6 wide, rather coriaceous, rounded or *obtuse at the base*, slightly or abruptly acute or acuminate, green above, *silvery-white underneath*, where they are conspicuously feather-veined with 14 to 20 pairs of straight ribs, which anastomose near the margins; the veinlets obscure in young leaves, or sometimes manifest. Petioles stout, an inch or an inch and a half long. *Flowers axillary; the staminate ones glomerate* on the dilated apex of a very short peduncle, apparently only 5 or 6 in number, on pedicels a line long, and with an ovate bractlet subtending the perianth. The latter is only a line and a half long, ferrugineous-puberulent. Andrœcium oblong, of 8 or 10 longitudinally united anthers. Pistillate flowers occur (along with forming fruit) only in the specimens from Tongatabu. These have short and very thick fertile peduncles, about half an inch long, terminated by a globular forming fruit, beneath which are borne a considerable number of sessile female flowers, with a subglobose trifid perianth, and a globular ovary. The fruit-bearing peduncles of some of the Samoan specimens likewise show indications of having borne three or more female flowers. The full-grown fruit is *globose-ovoid, minutely tomentose.* Seed an inch and a quarter long, and 10 lines wide, enclosed in a deeply laciniate *mace;* the albumen, &c. as in the genus.

4. MYRISTICA INUTILIS, *Rich, in herb.*

M. foliis lanceolatis acuminatis basi subobtusis pluricostatis subtus ferrugineo-puberulis, adultis albicantibus; floribus supra-axillaribus, masculis atque fœmineis umbellato-congestis; pedunculo brevissimo vel subnullo; fructu oblongo puberulo.

HAB. Tutuila and Savaii, Samoan Islands; abundant. Tongatabu.

"A middle-sized tree," with slender branchlets. *Leaves lanceolate, acuminate*, 6 to 10 inches long, 1¼ to 2½ inches in width, rather thin in texture, *obtusish at the base*, copiously feather-veined after the manner of all the foregoing species, and with the connecting veinlets obscure, glabrous above, when young *ferrugineous-pubescent beneath* (as are the branchlets and flowers), soon glabrate, but with the shining lower surface still fulvous, or at length whitish. Petioles an inch or less in length. *Flowers supra-axillary* (the male decidedly so), *umbellate on a short* (1–1½ line long) *or almost obsolete peduncle*. Staminate flowers numerous: pedicels 2 to 3 lines long, with a bractlet at their apex. Perianth 2 lines long, clavate-obloug, three-toothed. Andrœcium lanceolate, acute: the anthers about 5, slender, and with their short filaments united longitudinally into a column, which is nearly as long as the perianth. Female flowers several or numerous on the very short peduncle, or subsessile rhachis, pedicellate like the male flowers; the ovoid perianth three-lobed. *Fruit oblong*, or elongated-oblong, ferrugineous-puberulent when young, at length almost glabrate, 1¼ to 1½ inches in length, apiculate; the pericarp thin and two-valved; the mace much laciniated. Seed oblong, when full-grown an inch long and scarcely half an inch wide, with a thin crustaceous testa. Albumen, in the specimens, inodorous and tasteless.

This needs to be compared with the *M. lancifolia* of Poiret; which is described as having olive-shaped fruits, two or three together, and leaves not unlike those of the present plant, except that they are much smaller, as also the fruits.

5. MYRISTICA CINEREA, *Poir.?*

Myristica cinerea, Poir. Dict. Suppl. 4, p. 33? Spreng. Syst. 3, p. 65?

HAB. Caldera, Mindanao, Philippine Islands.

The leaves are larger than those of *M. cinerea* are said to be by Poiret, and are rounded or obtuse at the base. The flowers and fruits were not gathered, having fallen from the globular and sessile, axillary receptacles.

ORD. MENISPERMACEÆ.

1. STEPHANIA, *Lour.*

STEPHANIA, Lour. Fl. Cochin, ed. Willd. 2, p. 746; Endl. Atakt. Bot. t. 49, 50, & Gen. p. 827.
CLYPEA, Blume, Bijdr. p. 26; Decaisne, Herb. Timor. p. 95, t. 18; Wight & Arn. Prodr. Ind. Or. 1, p. 14.
STEPHANIA & CLYPEA, Miers, in Ann. & Mag. Nat. Hist. Jan. 1851.

1. STEPHANIA FORSTERI.

S. glabra; foliis peltatis ovatis hinc rotundatis illinc subacutis vel subacuminatis integerrimis, inferioribus obliquis; pedunculis petiolo æquilongis; floribus capitato-congestis; capitulis umbellatis; fl. masc. sepalis 6–8; *petalis* 3–4 *cuneatis; putamine annulari muricato.*

Menispermum Japonicum, Forst. Prodr. Fl. Ins. Austr. p. 71, non Thunb.
M. peltatum, Forst. in Herb. Lambert.
Cocculus Forsteri, DC. Syst. 1, p. 517, & Prodr. 1, p. 96; Guill. Zeph. Tait. p. 76.

HAB. Tahiti, Society Islands: open places in mountain woods. Also, without flowers or fruit, in the Samoan or Navigators' Islands, and Tongatabu.

Stem twining, striate-grooved, *glabrous*, or nearly so. *Leaves* excentrically *peltate, rounded-ovate*, with a *rather acute or acuminate* apex, 3 or 4 inches long, glabrous, paler, but scarcely glaucescent underneath, *entire*, the lower transversely *oblique*, the uppermost shorter than the petioles. *Peduncles* supra-axillary, *as long as the petioles;* the sterile *compound-umbellate*, with few primary rays of an inch or two in length; the secondary rays several, a quarter of an inch long, each terminated by a close *capitate cluster* of staminate flowers. These have *six* or more frequently *eight sepals* (oblanceolate-oblong and obtuse), and *three*, or more frequently *four petals*. The latter are broadly *cuneate*, cucullate, thickish, distinct, shorter than the sepals. Filament or column at length longer than the sepals, supporting a peltate disk, which is edged with a perfectly continuous, horizontally dehiscent, annular anther, just as figured by Decaisne in *Stephania* (*Clypea*, Decaisne) *glaucescens*. Fertile flowers not seen; but the fructiferous peduncle shows them to have been capitate at the apex of the (simple?) rays of the umbel. Drupe with a bony *annular putamen*, which is strongly *muricate* with transverse processes, the sides hollowed. Embryo slender, terete, curved almost into a ring. Albumen scarcely any.—The sterile specimen from Tongatabu has rounder leaves; but is likely to belong to the same species.

The floral envelopes vary from trimerous to tetramerous in different flowers of the same individual, in this, and, I believe, also in other species: the presence or absence of an outer row of sepals (which perhaps are rather to be regarded as bractlets), in the male flowers, is scarcely of generic importance: and the number of cells which enter into the composition of the annular anther cannot be ascertained in such species as this and *Stephania glaucescens*, although it is probable there are only two. The genus *Clypea*, as newly proposed by Mr. Miers, is therefore not likely to be maintained. Hence I refer all our species to the older genus.

2. Stephania Gaudichaudii, Sp. Nov.

S. foliis peltatis late ovatis subacuminatis basi truncatis seu ovato-subcordatis subtus ramulisque junioribus molliter pubescentibus; capitulis umbellatis; sepalis petalisque fl. fœm. 3–4.

Hab. Near Sydney, New South Wales. Also, Puen Buen: foliage only, of a smoother form.

This is doubtless the plant mentioned by Decaisne (Herb. Timor. p. 95) as a species of *Clypea*, collected by Gaudichaud at Port Jackson, and which Mr. Miers, who has examined a specimen in the Candollean herbarium, informs me is a *Clypea*, as he distinguishes the two genera. We have only the female plant, in flower; the *sepals and petals* of which, however, are as frequently *four* as *three* in number. The *leaves broadly ovate*, obtusely or *slightly pointed*, excentrically peltate, either *truncate* or the smaller ones *more or less cordate at the base*, 2 or 3 inches long, glabrous above, *softly pubescent underneath*, longer than the petioles. Peduncles of the fertile inflorescence an inch or more in length, pubescent, bearing from 5 to 8 *umbellate* short rays, each terminated by a dense or *capitate umbellet* or glomerule. The roundish petals are thickish, only half the length of the sepals.

3. Stephania australis, *Miers, l. c.*

Hab. Hunter's River, New South Wales. The fertile plant only.

This is very probably the species enumerated by Mr. Miers, under this name, founded on the *Cissampelos australis* of A. Cunningham's collection.

2. CISSAMPELOS, *Linn.*

1. Cissampelos capensis, *Linn.*

Hab. Cape of Good Hope: common in the vicinity of Cape Town.

2. Cissampelos discolor, *DC.?*

Var. cardiophylla: *foliis plerisque reniformi-cordatis subtus canescentibus; pedunculis floribusque hirsutissimis.*

Cissampelos Pareira, Blanco, Fl. Filip. p. 815? Walp. Rel. Meyen. p. 299?

Hab. Small Island, in the Sooloo Sea.

Only the sterile plant is in the collection. Some of the leaves being "very broadly ovate, with a truncate subcordate base," as DeCandolle (Syst. 1, p. 534) describes his *C. discolor*, from the Moluccas, I have ventured to refer our plant, although with some misgiving, to that species. But most of the leaves are distinctly cordate, or even reniform-cordate, and canescent with a fine pubescence underneath, although glabrous above; and the short peduncles, as well as the crowded and cymulose, minute flowers, are very hirsute with spreading bristly hairs. The corolla is a minute three-lobed cup, surrounding the base of the androecium, which consists of four subsessile, peltately-disposed anther-lobes.

3. NEPHROICA, *Miers*.

Petala bifida, lobis acutis vel acuminatis.—Cætera omnino Cocculi.

Nephroica, Miers, in Ann. & Mag. Nat. Hist. Jan. 1851.
Nephroia, Loureiro, Fl. Cochinch. (ed. Willd.) 2, p. 691.

1. Nephroica Ferrandiana.

N. ramulis retrorsum hirsutis; foliis subcoriaceis ovatis vel ovato-lanceolatis acuminatis nunc obtusis mucronatis basi obtusa rariusve subcordata 3–5-nerviis, adultis glabratis; pedunculis pauci–plurifloris petiolo brevioribus.

Cocculus Ferrandianus, Gaud. Bot. Voy. Freyc. p. 477, t. 101; Walp. Rel. Meyen. p. 268.

Hab. Kaala Mountains, behind Honolulu, Oahu; Districts of Puna and Waimea, Hawaii; also on the mountains of Kauai, Sandwich Islands.

Stems herbaceous, slender, twining, *hairy with a reflexed pubescence*, at length nearly glabrous. *Leaves rather coriaceous*, varying, often on the same individual, from *ovate and subcordate*, sometimes obtuse and retuse, to *ovate-lanceolate*, commonly *acuminate*, *mucronate*, somewhat narrowed and obtuse at the base, where they are 3–5-nerved, from one to 3 inches long, entire, strigose-pubescent when young, *soon glabrous*, or nearly so, except on the veins. Petioles slender, hairy. *Peduncles shorter than the petioles;* the fertile few-flowered; the sterile *few- or many-flowered*. Sterile flowers scarcely as large as those of *Cocculus Carolinus*, and of the same structure, except that the *petals* are longer than the stamens and *sharply two-cleft* at the summit; the *lobes subulate*. Fruit blue, much like that of *Cocculus Carolinus;* the linear cotyledons perhaps a little broader.

It is questionable whether the two-cleft petals sufficiently distinguish this genus from *Cocculus*, in which they are usually emarginate. But, according to Mr. Miers, it includes a very distinct group of plants, mostly natives of India.

4. LIMACIA, *Lour.*, *Miers.*

1. LIMACIA VELUTINA.

L. pube fulvo-aurea undique velutina; foliis ovali-oblongis mucronato-acuminatis basi rotundata trinerviis supra nunc glabratis; pedunculis fl. ster. supra-axillaribus fasciculatis petiolo subæquilongis apice confertim 3–5-floris.

Cocculus velutinus, Wall. Cat. no. 4970, a.

HAB. Singapore.

The specimen consists of a sarmentose branch of the sterile plant, clothed all over with a shining and *soft, golden-coloured, velvety pubescence. Leaves* 3 to 5 inches long and 2 or more in width, *oval or oblong*, the apex abruptly contracted into a narrow *acuminate* point, which is prolonged into a conspicuous mucronation, coriaceous and the upper surface becoming glabrous with age, *three-nerved at the rounded base*, the prominent midrib sending off 3 or 4 strong primary veins on each side. *Peduncles 3 to 5 in a fascicle* a little above the axil, an inch or less in length, bearing from 3 to 5 subsessile flowers in a close cluster. Sepals velvety-hirsute, subtended by 2 small bractlets; the three exterior ovate, about half the length of the three concave inner ones, which are valvate in æstivation. Petals 6, shorter than the inner sepals, smooth, cuneate, truncate, the margins involute below. Stamens 6, about the length of the petals and embraced by them, but free: the filaments somewhat clavate, sparsely hairy: anthers two-celled, didymous, innate. Fertile flowers not seen.

ORD. LARDIZABALEÆ.

1. LARDIZABALA, *Ruiz & Pav.*

1. LARDIZABALA TRITERNATA, *Ruiz & Pav.*

Lardizabala triternata, Ruiz & Pav. Fl. Peruv. & Chil.; DC. Syst. 1, p. 512; Deless. Ic. Sel. 1, t. 91; Decaisne, Lardizab. p. 188; Gay, Fl. Chil. 1, p. 70.

HAB. Chili, near Valparaiso; in high ravines.

There is reason to suspect, with M. Gay, that *L. triternata* and *L. biternata* are not distinct species. Only one species is mentioned by Dr. Pickering, as having been noticed by him. The characters derived from the foliage appear to be inconstant.

ORD. BERBERIDACEÆ.

1. BERBERIS, *Linn.*

* *Antarcticæ.*

1. BERBERIS BUXIFOLIA, *Lam.*

Berberis buxifolia, Lam. Ill. t. 253, f. 3; Poir. Dict. 8, p. 619; DC. Syst. 2, p. 15; Hook. f. Fl. Antarc. p. 231, t. 87; Gay, Fl. Chil. 1, p. 91.
B. microphylla, Forst. Comm. Goett. 9, p. 29; Willd. Spec. 2, p. 228; Poir. l. c.
B. dulcis, Sweet, Hort. Brit. ser. 2, t. 100, ex. Hook. f.

HAB. Orange Harbour, Fuegia: common.

This species and the next one are beautifully illustrated by Dr. Hooker, in his excellent Flora Antarctica. The berries, which are globular and blue, like those of the *Mahonia* section of the genus, are agreeably acid, like those of the common Barberry, and have been used for tarts, &c.

2. BERBERIS ILICIFOLIA, *Forst.*

B. ilicifolia, Forst. Comm. Goett. 9, p. 28; Linn. f. Suppl. p. 210; DC. l. c.; Hook. Fl. Antarc. p. 230, t. 86; Gay, Fl. Chil. 1, p. 77.
B. lagenaria, Poir. Dict. 8, p. 619.

HAB. With the preceding: common.

Some of the specimens have fine ripe fruit. The blue berries, as large as our huckle-berries, are ovoid-globose, and pointed with the thick persistent style, terminated by a dilated stigma; whence they have been said to be "lagenæform." It is the handsomest species of the genus, on account of its deep green and shining, Holly-like leaves, and very copious, golden yellow flowers.

* * *Chilenses.*

3. BERBERIS EMPETRIFOLIA, *Lam.*

B. empetrifolia, Lam. Ill. t. 253, f. 4; DC. l. c.; Hook. & Arn. Bot. Misc. 3, p. 136; Hook. f. Fl. Antarc. p. 231; Gay, Fl. Chil. 1, p. 93.

HAB. Mountains near Santiago, Chili: "abundant in the upper part of the middle region of the Chilian Cordilleras."

The species is not contained in the Antarctic collection, which was made on the moister eastern side of Fuegia. It belongs to a drier region, and extends northwards along the Chilian Andes to latitude 30°, according to Gay. Our specimens of this and the succeeding Chilian species have neither flowers nor fruit.

4. BERBERIS CHILENSIS, *Gill.*

Berberis Chilensis, Gillies in Hook. Bot. Misc. 3, p. 135; Gay, Fl. Chil. 1, p. 79.
B. ilicifolia, Bert, in Merc. Chil., ex Gay.

HAB. Cordilleras, near Santiago, Chili; and between Santiago and Valparaiso.

5. BERBERIS ACTINACANTHA, *Mart.*

Berberis actinacantha, Mart. in Schult. Syst. Veg. 7, p. 12; Hook. & Arn. Bot. Misc. 3, p. 135; Gay, l. c.
B. crispa & B. horrida, Gay, Fl. Chil. l. c.?

HAB. Between Santiago and Valparaiso. Also on the heights behind Valparaiso.

6. **Berberis ferox**, *C. Gay, l. c.*

Hab. Cordilleras, near Santiago, Chili. (Not improbably this is the same species as the obscure *B. cuneata* of De Candolle.)

Ord. PAPAVERACEÆ.

1. ARGEMONE, *Linn.*

1. **Argemone Mexicana**, *Linn.*

Hab. Callao to Yanga, Peru. Valparaiso and Santiago, Chili. Sandwich Islands.—Originally an American plant, no doubt; but now widely distributed over the warmer parts of the world.

ORD. FUMARIACEÆ.

1. FUMARIA, *Linn.*

1. FUMARIA OFFICINALIS, *Linn.*

HAB. Valparaiso: doubtless introduced from the Old World, to which the genus entirely belongs. Not being mentioned in Gay's Flora of Chili, it is probably of recent or scanty introduction. In North America it occurs only in cultivated or recently cultivated grounds, and it can scarcely be said to be naturalized.

2. FUMARIA AGRARIA, *Lag.*

Fumaria agraria, Lagasca, Elench. p. 21; Parlatore, Mon. Fumar. p. 72.
F. media, DC.; Gay, Fl. Chil. 1, p. 104.
F. capreolata, var. γ. Hook. & Arn. Bot. Beech. Voy. p. 5.

HAB. Valparaiso, near the coast. Doubtless introduced from Europe; but now so thoroughly and extensively naturalized in Chili that, according to M. Claude Gay, it is at first view difficult to believe that it was not indigenous to the country.

ORD. CRUCIFERÆ.

1. MATTHIOLA, *R. Br.*

1. MATTHIOLA MADERENSIS, *Lowe.*

Matthiola Maderensis, Lowe, ex Lemann, Cat. Mad. Pl. in Hook. Niger Fl. p. 78.

HAB. Madeira, on the coast east of Funchal. (In fruit.)

2. CHEIRANTHUS, *Linn., R. Br.*

1. CHEIRANTHUS MUTABILIS, *L'Her.*

Cheiranthus mutabilis, L'Her. Stirp. 1, p. 92; Bot. Mag. t. 195; Bot. Reg. t. 1431.
Dichroanthus mutabilis, Webb. & Berth. Phytogr. Canar. 1, p. 66.

HAB. Madeira; with the preceding.

3. NASTURTIUM, *R. Br.*

1. NASTURTIUM OFFICINALE, *R. Br.*

HAB. Sea-coast, east of Funchal, Madeira.

The *Water-Cress* is now very widely distributed over most parts of the world that have been colonized by Europeans. It was probably introduced into Madeira.

2. Nasturtium palustre, *DC.*, var.

Nasturtium sylvestre, A. Rich. Fl. N. Zel. (Voy. Astrolab.) p. 309, non DC. *N. terrestre*, R. Br.; Hook. f. Fl. Antarc. p. 14.

Hab. Bay of Islands, New Zealand.

Although the specimens are incomplete, and without ripe fruit, I think they cannot belong to the European *Nasturtium sylvestre*; but they accord very well with what I take for a variety of *N. palustre* in the Northern United States, with more or less hairy stems, and with rather shorter pods than I have ever observed in the European plant.

4. BARBAREA, *R. Br.*

1. Barbarea australis, *Hook. f.*

Barbarea australis, Hook. f. Fl. N. Zeal. p. 14.

Hab. Bay of Islands, New Zealand.

Our specimens are indifferent, wanting the lower leaves. The pods are not as large as they are described by Dr. Hooker, being only an inch long, and barely a line wide. The radicle is occasionally oblique, as in certain *Sisymbria*.

5. ARABIS, *Linn.*

1. Arabis albida, *Stev.*

Arabis albida, Stev. in DC. Prodr. 1, p. 142; Hook. Niger Fl. p. 78.

Hab. On rocks, Curral, Madeira.

This plant is so named by Dr. Lemann, in the Niger Flora, above cited: but the pods are longer than in the Caucasian plant. The specimen has old fruit only.

6. CARDAMINE, *Linn.*

1. CARDAMINE GERANIIFOLIA, *DC.*

Cardamine geraniifolia, DC. Syst. 2, p. 268; Hook. f. Fl. Antarc. p. 233, f. 88.
Sisymbrium geraniifolium, Poir. Dict. 7, p. 218.

HAB. Orange Harbour, Fuegia.

The specimen has only half-grown pods, like those of Commerson's collection, described by Poiret and DeCandolle. Dr. Hooker's admirable figure represents the flowering state only. The seeds are not yet known.

2. CARDAMINE CORYMBOSA, *Hook. f.*

Cardamine corymbosa, Hook. f. Fl. Antarc. p. 6; Hook. Ic. Pl. t. 686.

HAB. Orange Harbour, Fuegia.

The specimens accord in all respects with those of Dr. Hooker, who has the plant only from Campbell's Island, in the same latitude as Fuegia, indeed, but 110° distant in longitude.

3. CARDAMINE GLACIALIS, *DC.*

C. perennis, pilosiuscula vel glabra; foliis carnosulis pinnatisectis, segmentis 1–3-jugis sessilibus oblongis ciliolatis cum impari rotundato seu reniformi sæpius maximo; floribus majusculis; siliquis latiuscule linearibus confertis strictis stylo brevissimo apiculatis, replo marginibus incrassatis.

Var. *a. pumila; segmentis lateralibus foliorum sæpius parvis, terminali reniformi.*

Cardamine glacialis, DC. Syst. 2, p. 264, & Prodr. 1, p. 153.
C. antiscorbutica, Banks & Soland. in herb. Banks.
C. hirsuta, var. *nivalis*, Hook. f. Fl. Antarc. p. 232.
Sisymbrium glaciale, Forst. Comm. Gœtt. 9, p. 32; Poir. Dict. 7, p. 218.

Var. *β. elatior; segmentis lateralibus foliorum oblongis terminali obovato vix minoribus.*

Cardamine nivalis, Gillies, in Hook. Bot. Misc. 3, p. 136.

Hab. Orange Harbour, Fuegia; both varieties: the latter also from Rio Negro, Patagonia. Andes of Chili, near Santiago, on the snow line; a dwarf form, in fruit.

Root manifestly *perennial*, often tuberous. Stems 2 to 4 inches, or in the larger variety a foot high, *sparsely hairy*, or *glabrous*, at least above, ascending or erect, leafy to the top. *Leaves pinnate*, petioled, *rather fleshy: leaflets ciliate*, somewhat angulate-toothed or entire; *the terminal one rounded or reniform* and petioled, the lateral sessile and smaller, sometimes minute or wanting; or, in the larger form, *the terminal obovate and the lateral somewhat similar* to it, little smaller, all from half to three-quarters of an inch in length. Flowers 3 lines long. *Siliques* numerous and *much crowded* on the short racemes, erect, *strict, rather broadly linear*, from an inch to an inch and a half in length, almost a line wide; the valves separating from a *broadly margined replum*. Seeds oval, about 12 in each cell.

I cannot think, with Dr. Hooker, that this plant is a form of the variable and cosmopolite *Cardamine hirsuta*. Ours has a perennial root, and flowers fully as large as those of *C. amara;* but I most rely for distinguishing it upon the larger and stouter pods; these being fully twice as broad as those of any form of the European or North American *C. hirsuta*. I scarcely doubt, although my specimen of it is incomplete, that *Cardamine cordata* of Barneoud, in Gay's Flora Chilena, 1, p. 109, is a variety of *C. glacialis*.—The *C. pratensis* var., Fl. Chil. 1, p. 114, is the well-marked *C. tenuirostris*, Hook. & Arn. Bot. Voy. Beech. 1, p. 6.

4. Cardamine Chilensis, *DC.*

Cardamine Chilensis, DC. Syst. 2, p. 244; Barneoud, in Gay, Fl. Chil. 1, p. 108.

Hab. Between Valparaiso and Santiago, Chili.

The single specimen in the collection is remarkable for its solitary and axillary flowers; in which, as in other respects, it accords better with the character given in the Flora Chilena, than with that of DeCandolle.

5. Cardamine laxa, *Benth.*

Cardamine laxa, Benth. Pl. Hartw. p. 158 (no. 880).

Var. pumila: *siliquis pedicello duplo longioribus stylo brevi apiculatis.*

Hab. Culnai to Casa Cancha, high Andes of Peru.

Stems barely a span in length, decumbent or ascending. Segments of the cauline leaves only 3 lines long. Siliques 8 or 9 lines long, on pedicels only 4 or 5 lines long, nearly erect, pointed with a very short style, broader for their length than those of *C. hirsuta;* the flowers also larger. The replum has the same broad margins as in *C. glacialis.*—I think that our specimens belong to a depauperate form of Mr. Bentham's *C. laxa.*

6. Cardamine hirsuta, *Linn.*

Hab. Hawaii, Sandwich Islands: in the district of Waimea, &c.

One of the specimens agrees with the ordinary *C. hirsuta*. The other has rounder, obtusely lobed, somewhat reniform, and more petioled segments of the leaves; and resembles the var. *sylvatica* (*C. sylvatica*, Link).

7. Cardamine sarmentosa, *Forst.*

C. sarmentosa, Forst. Prodr. Fl. Ins. Austr. no. 529; DC. Syst. 2, p. 265; Hook. & Arn. Bot. Voy. Beech. p. 59.

Hab. Samoan and Society Islands; on the shore, and in waste grounds. Dr. Pickering also noticed it in the Tonga and Feejee Islands, around dwellings; apparently introduced. Also at Lima, Peru!

The divergent pods are terete or nearly so, giving the plant the appearance of a *Sisymbrium;* and the valves show some traces of a midnerve. But the seeds, although turgid, have the cotyledons accumbent. The pods are from 7 to 9 lines long, tipped with a style of a line in length. This plant had been found only in the South Sea Islands; but the specimen gathered at Lima clearly belongs to this species.

7. KONIGA, *R. Br.*

1. Koniga maritima, *R. Br.*

Alyssum maritimum, Lam. Dict. 1, p. 98; DC. Syst. 2, p. 318, & Prodr. 1, p. 164
Lobularia maritima, Desv. Jour. Bot. 3, p. 162; Webb & Berthol. Phyt. Canar. 1, p. 91.

Hab. St. Helena. Probably introduced from Europe.

8. DRABA, *Linn.*

1. Draba cryptantha, *Hook. f.*

D. incano-tomentosa, depressa; caudice ramoso cæspitoso; foliis imbricatis obovatis obtusis concavis; racemo abbreviato paucifloro, florifero *inter folia suprema sessili (petalis spathulatis albis unguiculatis), fructifero nunc breviter exserto; siliculis longe pedicellatis ovatis incanis stylo brevi apiculatis.*

D. cryptantha, Hook. f. Fl. Antarc. p. 234, adnot.

HAB. Between Culnai and Casa Cancha, high Andes of Peru; in the alpine region.

Stems *depressed*, numerous from a perennial root, *cæspitose*, the tufts from half an inch to 2 inches long, crowded, covered with the *imbricated leaves*. These are *canescently tomentose*, as is the whole plant more or less, *obovate, obtuse, concave*, thickish, 2 or 3 lines long. *Raceme few-flowered, abbreviated, and almost sessile* among the leaves at the summit of the branches *when in flower* (the flowers small, with *spatulate and unguiculate white petals*); *in fruit* raised, in our specimens, upon a peduncle of from 2 to 4 lines in length, and therefore more or less *exserted* beyond the leaves; the pedicels somewhat umbellate, a line or a line and a half long. *Silicle ovate, canescent*, about 2 lines in length, *tipped with a very short style.*

The plant described by Dr. Hooker (from Cerro Pasco, in the same district) is in flower, and with some barely mature fruit; in which state it deserves the name of *D. cryptantha*. Our specimens are not only in fruit, but far advanced, the valves and seeds having fallen from the pods; and in this state the peduncles are more or less exserted. The species properly belongs to the second section of Dr. Hooker's revision of the South American *Drabæ*; so that his first section might be suppressed.

2. DRABA MACLEANI, *Hook. f.*

D. incano-tomentosa; caule brevissimo diviso e radice perenni; foliis confertis obovato-oblongis obtusis; pedunculo elongato nudo; corymbo subcapitato; floribus parvis breviter pedicellatis albidis; siliculis glaberrimis ovatis in stylum brevissimum attenuatis, valvis planis.

D. Macleani, Hook. f. Fl. Antarc. p. 235, adnot.

Var. β. STYLOSA: *siliculis juxta margines parce hirtis mox glabris stylo longiusculo superatis; corymbo laxifloro.*

HAB. Above Obrajillo, Andes of Peru: probably in the alpine region (var. β.).

The specimen agrees well with that described by Dr. Hooker, which was gathered by Mr. M'Lean in the same region, except in the particulars above mentioned. The stems divide from the crown of the slender perennial root, are an inch or two in length: the *leaves crowded*, but spreading, *canescently tomentose*, somewhat hirsute, 3 lines long, *obovate-oblong, obtuse.* Peduncle an inch or so in length, naked, hirsute, bearing a small umbelliform corymb, which is scarcely subcapitate, as the *flowers are few and lax*, on pedicels as long as the calyx. Sepals a line long, loosely hirsute, as are the pedicels, shorter than the spatulate and apparently white petals. *Silicles ovate, glabrous*, except that the margins are beset with scattered hirsute hairs, which are, however, deciduous, 2 or 3 lines long, *tapering into a distinct style*, which is *slender*, and over half a line long, while in Dr. Hooker's plant it is very short: the *valves flat.*

3. DRABA BRACKENRIDGEI, Sp. Nov.

D. canescenti-pubescens; caulibus abbreviatis e radice perenni divisis; foliis confertis obovato-oblongis obtusis; pedunculis elongatis nudis; racemo densifloro; floribus parvulis albis; siliculis oblongis seu lanceolato-ellipticis pubescentibus stylo brevissimo superatis, valvis subplanis.

Var. β. *siliculis mox glabratis; caulibus nunc elongatis.*

Var. γ. *siliculis sæpius lineari-oblongis mox subglabratis; foliis canescenti-tomentosis.*

HAB. Baños, and above Obrajillo, Andes of Peru.

Plant *canescent* with a rather *hirsute stellate pubescence*, or, in var. γ. *tomentose-canescent:* the *short stems branching from a perennial root*, tufted, an inch or two in length. *Leaves crowded*, spreading, 3 to 6 lines long, *obovate-oblong, obtuse*. *Peduncles scapiform, leafless*, from one to 3 inches long. *Raceme in flower dense* and subcorymbose, in fruit more or less elongated, with the lower pedicels rather distant, but the upper corymbose-crowded. Flowers nearly 2 lines long: *petals white*. Pedicels spreading, a line or two in length. *Silicles* mostly 3 lines long and a line wide, *pubescent* with short and close hairs, sometimes almost as canescent as the leaves, even when mature; while in the varieties characterized above, this pubescence is sparser and more or less deciduous: their form varies from *elliptical-oblong to oblong-linear;* the *valves nearly flat*. *Style very short*, but distinct. Seeds 10 to 15 in each cell.

A rather variable species, allied to *D. Macleani*, into which some of the forms may possibly pass, notwithstanding their narrow and pubescent pods.

4. Draba Pickeringii, Sp. Nov.

D. tomentoso-canescens; caulibus e radice perenni divisis abbreviatis; foliis confertis obovatis obtusis; pedunculis elongatis nudis vel oligophyllis; racemo densifloro; floribus majusculis sublonge pedicellatis albis; pedicellis calyceque villosis; siliculis ovali-ellipticis incano-pubescentibus stylo longiusculo abrupte superatis; valvis planis.

Hab. Between Culnai and Obrajillo, high Andes of Peru.

Plant *canescent* with a close stellate tomentum, and with hirsute or villous hairs. Stems clustered from a *perennial root*, an inch long: the *leaves crowded*, spreading, *obovate, obtuse*, 4 to 6 lines long, *often one or two oblong ones on the peduncle*, or at the base of the raceme. Peduncle 2 or 3 inches long. *Raceme densely-flowered*, an inch long; the pedicels from 3 to 5 lines long, all approximated, or two or three of the lower ones distant, villous, as also is the calyx. Flowers rather larger than in the preceding species: *petals white*. *Silicles oval or broadly elliptical*, very obtuse, about 3 lines long and 2 lines wide, *canescently pubescent*, abruptly tipped with a *conspicuous style* of about half a line in length; the *valves flat*, very thin. Seeds 10 to 16 in each cell.

9. TEESDALIA, *R. Br.*

1. Teesdalia Lepidium, *DC.*

Hab. On the summit of the Pico Ruivo, Madeira.

10. CREMOLOBUS, *DC.*

1. Cremolobus aphanopterus, Sp. Nov. (Tab. 3.)

C. annuus, parvulus, subglaber; foliis pinnatipartitis; racemis elongatis; siliculæ valvis fere apteris minimis stipitem gracilem haud excedentibus; stylo elongato e basi crassa subulato.

Hab. Andes of Peru, near Obrajillo.

Root slender, *annual*. Stem slender, simple or branching above, about a span high, *glabrous*, or beset with a few minute simple hairs. *Leaves* small (6 or 8 lines long), glabrous or nearly so, mostly sessile, *deeply pinnatifid;* the divisions oblong and very obtuse. *Racemes elongated*, strict, many-flowered. Pedicels 2 or 3 lines long. Flowers very small: petals apparently white, obovate, unguiculate. Stamens 6: filaments filiform. Stipe as long as the ovary with its style; the former consisting of a pair of rounded, scrotiform lobes or cells, separated by the very thick axis, or dissepiment, which is continued into the *large and long style*, the tapering apex of which is crowned by a globular, undivided stigma. *Silicle very small*, minutely puberulent under a lens; the rounded lobes or valves scarcely if at all above half a line in diameter, *not longer than the stipe*, not rugose nor reticulated, *nearly wingless*, but surrounded by a slight and wavy or interrupted margin. Seed nearly orbicular, resupinate-pendulous, so as to make the ascending radicle internal!

Of the genus *Cremolobus*, the true character of which was pointed out by Mr. Brown,* five Peruvian species have been figured by Sir William Hooker; but in none of them is the position of the embryo shown. I have, therefore, given a figure of the present species, which differs from Hooker's *C. pinnatifidus* nearly as his *C. rhomboideus* does from his *C. sinuatus.* It is moreover remarkable for the minute size of the silicles, which are even smaller in our specimens than they are delineated in the figure.

PLATE 3, *A.*—CREMOLOBUS APHANOPTERUS: a plant of the natural size. Fig. 1. A flower, enlarged. 2. A petal, more enlarged. 3. Stamens and pistil, magnified. 4. The pistil, more magnified, on its long stipe. 5. A ripe silicle, magnified. 6. The same, with one valve detached, and with the contained seed and embryo transversely divided; the other valve longitudinally divided in place. 7. A seed, magnified.

2. CREMOLOBUS PINNATIFIDUS, *Hook.*

C. annuus, pusillus, subglaber; foliis pinnatifidis vel incisis spathulato-oblongis; racemis laxis nunc elongatis; siliculæ valvis orbiculatis ala lata sinuata seu integriuscula cinctis stipite gracili longioribus; stylo e basi crassa subulato.

Cremolobus pinnatifidus, Hook. Ic. Pl. t. 100.

Var. *β.* INTEGRIFOLIUS: *foliis indivisis aut obsolete dentatis aut integerrimis; racemo brevi.*

HAB. Andes of Peru, near Obrajillo and Baños. *β.* At Baños.

A *small, slender annual,* a span or less in height, *nearly glabrous,* but showing some hairiness on a close inspection, as in the last species. *Leaves incisely pinnatifid,* as represented in Hooker's figure, or sometimes almost pinnately parted as in *C. aphanopterus;* or, in var. *β. entire or nearly entire,* and *oblong or spatulate.* The latter is perhaps a depauperate state, from one to 3 inches high; but its flowers are as large as in the pinnatifid forms, namely, about 2 lines long, which is larger than those of the foregoing species. The racemes are either rather short and few-flowered, or elongated in fruit. The mature silicles are from 2 to 3 lines broad; the *valves* considerably *longer than the stipe, surrounded with a pretty wide wing*, which is either *repand or almost entire*, or sometimes with the margin *sinuate-toothed;* the disk smooth or slightly rugose. Style nearly as in the foregoing, or perhaps not quite so long, subulate or tapering upwards from a very thick base.

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* Observations on the Structure and Affinities of the more remarkable Plants collected by Oudney, Denham, & Clapperton, &c., p. 7.

The specimens of Matthews, figured by Hooker, do not exhibit any mature fruit. I add a ripe silicle, therefore, to Plate 3. The wing varies considerably in different states or stages of the plant; but I think it unlikely to pass into the foregoing species. Forms of the species gathered by Professor Jameson and Mr. McLean are also preserved in the Hookerian herbarium.

PLATE 3, *A*.—Fig. 8. CREMOLOBUS PINNATIFIDUS: a ripe silicle, of the natural size. 9. The same, enlarged.

11. BRAYA, *Sternb. & Hopp.*

1. BRAYA PUSILLA.

B. multiceps; foliis fere omnibus radicalibus rosulatis lineari-spathulatis integerrimis carnosulis præsertim ad margines hispidis; scapo glabro 5–6-floro; siliquis breviter linearibus seu lineari-oblongis stylo brevissimo apiculatis.

Erysimum? pusillum, Gillies, in Hook. Bot. Misc. 3, p. 140.

HAB. Andes of Chili, above Santiago; on the snow line.

A dwarf, *cæspitose*, and *multicipital* plant, with the aspect of an alpine *Draba*, except as to the pods. *Leaves all radical and rosulate-tufted*, or sometimes with a small one on the scape, *rather thick and fleshy*, *spatulate-linear*, 3 to 5 lines long, sparsely hispid all over, or when old glabrous, except the *hispid-ciliate, entire* margins. *Scapes* in our (fruiting) specimen only half an inch long (the plant of Gillies is larger), 5–6-*flowered*. *Siliques* corymbose, *linear or oblong-linear,* nearly terete, 3 or 4 lines long, often a little curved, *tipped with a very short but distinct style;* the valves strongly convex, one-nerved. Seeds about 8 in each cell, as much biserial as in *Braya alpina*, as figured by Hooker (Exot. Fl. t. 121). Cotyledons incumbent.

Only a single fruiting specimen exists in the collection, which, on comparison, I find to be the same as the plant of Gillies characterized by Hooker and Arnott as a doubtful *Erysimum:* but I believe it has white or purplish flowers, and that its characters more nearly accord with *Braya*, of which it has much the habit. To this genus, now for the first time identified in the southern hemisphere, I should also refer the *Draba imbricatifolia* of Barneoud, in Gay's Flora Chilena, which indeed is hardly to be distinguished from *B. pusilla*, except by its slender style.*

12. SISYMBRIUM, *Linn.*

1. SISYMBRIUM LEPTOCARPUM, *Hook. & Arn.*

S. leptocarpum, Hook. & Arn. Bot. Misc. 3, p. 139; Gay, Fl. Chil. 1, p. 124.

HAB. Obrajillo, Andes of Peru.

Our specimen, which is in a mature fruiting state, accords pretty well with the *S. leptocarpum* of Chili. The whole plant is smooth; the leaves not unlike those of *S. officinale:* but the slender, slightly curved, spreading pods are an inch and a half or more in length, on pedicels over half an inch long.

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* BRAYA IMBRICATIFOLIA: *multiceps e caudice lignescente, cæspitosa; foliis brevissimis rosulatis imbricatis spathulatis integerrimis hispidissimis; scapo glabro nudo 4–8-floro; siliquis linearibus stylo gracili coronatis.*

Draba imbricatifolia, Barn. in Gay, Fl. Chil. 1, p. 158.

Pods narrowly linear, 4 to 6 lines long, terete, acute, pointed with a style of a line in length: the valves obscurely one-nerved. The dissepiment is split through the middle, as in *B. alpina*. Seeds about 10 in each cell, nearly uniserial. Cotyledons incumbent.

2. Sisymbrium myriophyllum, *Humb. & Bonpl.*

S. myriophyllum, Humb. & Bonpl. in DC. Syst. 2, p. 477, & Prodr. 1, p. 194; Benth. Pl. Hartw. p. 159; Walp. in Rel. Meyen. p. 249.
S. pimpinellifolium, Barn. in Gay, Fl. Chil. 1, p. 129.

Hab. Baños and Obrajillo, Andes of Peru.

Ours accord with Jameson's and Hartweg's specimens from Antisana: and *S. pimpinellifolium*, from the Cordilleras of the northern part of Chili is the same species.* The seeds occupy two series in each cell as distinctly as in *S. canescens* (vide Gray, Gen. Am. Bor. Or. Ill. 1, t. 64), and other species of the section *Descurea* (*Descurainia*, Webb), and one specimen has the dissepiment fenestrate or abortive, as in the following species.

3. Sisymbrium athrocarpum, Sp. Nov. (Tab. 3).

S. cano-tomentosum; foliis pinnatisectis, segmentis oblongis pinnatipartitis, lobis ovalibus confertis; floribus fructibusque capitato-corymbosis arcte congestis; siliquis brevissimis oblongis tetragonis florem marcescentem bis terve tantum superantibus; septo late fenestrato vel evanido; seminibus biseriatis.

Hab. Obrajillo, and from Culnai to above Casa Cancha, in the high Andes of Peru. (Andes of Peru, Mr. McLean, in herb. Hook.)

Root apparently annual. Stems from 2 inches to a foot high, clothed, as is the foliage, &c., with a *soft hoary wool*. *Leaves* an inch or two in length, narrowly oblong in circumscription, *pinnately dissected* into from 13 to 19 subsessile *segments* or leaflets: these are *oblong*, and *pinnately parted* or cleft into from 9 to 15 *oval*, *entire*,

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* *Sisymbrium Titicacense*, Walp. Rel. Meyen. p. 249, or, at least, a plant in the Hookerian herbarium, from Titicaca, which accords with the character, is apparently only the short-fruited form of Nuttall's *S. canescens*.

crowded lobes. The stem branches at the summit, and bears a number of *crowded corymbs*, each with a great number of flowers, on pedicels as long as the calyx, but so aggregated as to appear *capitate, as well in fruit as in flower;* for the axis does not at all elongate with age. Petals pale yellow, spatulate, unguiculate. These, as well as the rest of the floral organs, are persistent, more or less withering, around the base of the pod. *Siliques very short*, only 2 lines long, *oblong, acutely four-angled, only twice or thrice the length of the persistent petals;* the valves strongly carinate and one-nerved: the *partition obsolete*, except at the summit, or reduced to a narrow margin. Stigma depressed-capitate, subsessile. Seeds about 20 in each cell, occupying two distinct series. Cotyledons incumbent.

This is a well-marked new species of the group to which the preceding and *S. canescens*, Nutt. belong, and which would appear to be fully as distinct from the true *Sisymbria* as is the genus *Braya*. If *S. Sophia, S. millefolium*, and *S. tanacetifolium*, had the seeds likewise biserial, there would be no doubt of the propriety of adopting the genus *Descurea*, Guettard, or *Descurainia*, Webb & Berth. (*Hugueninia*, Reichenb.)

PLATE 3, *B.*—SISYMBRIUM ATHROCARPUM. Fig. 1. Upper part of a plant. 2. The whole of a dwarf specimen: both of the natural size. 3, 4. Branched hairs of which the pubescence consists, magnified. 5. A flower, magnified. 6. A sepal. 7. A petal. 8. A flower from which the sepals and petals have been removed. 9. Silique, with the withering-persistent remains of the flower. 10. The replum (placentæ), with the vestiges of the almost obsolete partition. 11. A pod transversely divided. 12. The replum, with the seeds attached. 13. A seed transversely divided. 14. Embryo detached entire.—All the analyses more or less magnified.

4. SISYMBRIUM SPATHULÆFOLIUM, Sp. Nov.

S. humile; caulibus e radice perenni crassa pluribus adscendentibus pilis bi–trifurcatis pubescentibus; foliis omnibus obovato-spathulatis carnosulis integerrimis nunc parce subdentatis glabriusculis basi attenuatis subpetiolatis, summis flores infimos bracteantibus; racemo *laxifloro; siliquis glabris subulato-linearibus pedicello erectiusculo longioribus stylo brevi apiculatis, valvis subcarinato-uninerviis.*

HAB. Obrajillo or Baños, Andes of Peru.

Root perennial, thickish, somewhat lignescent? *Stems several,* 3 to 6 inches long, *ascending,* rather leafy, more or less *hairy, with a 2–3-forked pubescence. Leaves* sparsely beset with similar hairs, or at length almost glabrous, all *obovate or spatulate, rather fleshy, entire,* or some of the upper ones obscurely 2–3-toothed, the radical ones 6 to 8 lines long, and narrowed into distinct petioles of equal length; the cauline 3 or 4 lines long, *narrowed at the base* into a short petiole, or subsessile. Raceme short and corymbose in flower, more or less elongated and loose in fruit; some of the *lower flowers usually bracteate;* the bracts, like the upper cauline leaves, rather shorter than the fructiferous pedicels. Flowers a line and a half long: sepals greenish: the petals apparently white or purplish. *Siliques glabrous,* 6 or 8 lines long, ascending or slightly spreading (the *pedicel mostly erect,* 3 or 4 lines long), *linear-subulate,* nearly terete, *pointed with a short style;* the *valves one-nerved, scarcely connate.* Dissepiment one-nerved. Seeds 8 or 10 in each cell, in a single series. Cotyledons incumbent.

In habit and foliage this plant has much the aspect of a *Thlaspi.* Its pods are those of a *Sisymbrium.*

5. SISYMBRIUM? AMPLEXICAULE, Sp. Nov.

S.? glabellum; caule e basi suffruticosa ramoso; ramis divergentibus; foliis ovato-oblongis sinu profunde sagittato-cordato amplexicaulibus integerrimis; floribus laxe racemosis ebracteatis; petalis unguiculatis; siliquis immaturis patentissimis filiformibus elongatis stigmate sessili superatis.

HAB. Between Caball and Obrajillo, Andes of Peru.

Stems from a span to a foot high, the base *apparently suffruticose, loosely and divergently branched;* the branches slender, *nearly glabrous. Leaves* glabrous or minutely pruinose, about half an inch long, *ovate-*

oblong or ovate-lanceolate, and *clasping by a very deep and narrow cordate sinus, entire,* veinless, probably of a fleshy texture when living. *Racemes loose;* the pedicels 2 or 3 lines long, *not bracteate.* Sepals smooth, membranaceous, greenish, oval-oblong, rather lax. *Petals* obovate-spatulate, *conspicuously unguiculate* (the claws about the length of the calyx), apparently white or rose-colour, 3 lines long. Anthers linear, sagittate. *Siliques very slender, filiform,* an inch or more in length, terete, glabrous, not stipitate, *widely spreading,* tipped with a depressed-capitate, *nearly sessile stigma;* the valves nerveless or nearly so. Seeds numerous in a single series in each cell, oblong, surrounded by a hyaline pellicle. None of them are sufficiently matured to show the nature of the embryo; but, from the narrow shape of the seed, the cotyledons are doubtless incumbent. (*Sisymbrium amplexicaule,* Desf. = *Sinapis amplexicaulis, DC.*)

13. LEPIDIUM, *Linn., R. Br.*

1. Lepidium Bonariense, *Linn.*

L. Bonariense, Linn.; DC. Syst. 2, p. 543; Gay, Fl. Chil. 1, p. 164.
Thlaspi Bonariense, etc. Dill. Hort. Elth. p. 281, t. 286, f. 370.
T. Bonariense & *T. multifidum,* Poir. Dict. 7, p. 543, 545.

Hab. Rio Negro, North Patagonia; on sand-hills.

2. Lepidium bipinnatifidum, *Desv.*

Lepidium bipinnatifidum, Desv. Jour. Bot. 3, p. 177; DC. Syst. 2, p. 544; Gay, Fl. Chil. 1, p. 165.

Hab. Obrajillo, Peru. (Also, Quito, Antisana, &c., Jameson.)

3. Lepidium ruderale, *Linn.*

Hab. Puen Buen, New South Wales. Introduced from Europe. But it was long ago gathered in New Holland by Labillardiere.

4. Lepidium graminifolium, *Linn.*

Hab. Cape of Good Hope, in the vicinity of Cape Town.

5. Lepidium piscidium, *Forst.*

Lepidium piscidium, Forst. Prodr. p. 46, & MS. descr. in Guill. Zeph. Tait. p. 75; DC. Syst. 2, p. 546; Hook. & Arn. Bot. Beech. Voy. p. 59.

Hab. Coral Islands of the Pacific; widely diffused. It is also mentioned as having been gathered at the Sandwich Islands, by Nelson, Meyen, &c.; but from thence we have only the nearly allied

6. Lepidium Owahiense, *Cham. & Schlecht.*

Lepidium Owahiense, Cham. & Schlecht. in Linnæa, 1, p. 32; Hook. & Arn. Bot. Beech. Voy. p. 78; Walp. Rel. Meyen. p. 250.

Hab. Coast of Oahu and Hawaii, Sandwich Islands.

This is pretty well distinguished from the preceding species by its rounded silicles (orbicular or rounded-obovate, instead of oblong-obovate), with the stigma included in the notch. The leaves, also, are usually of a firmer texture, the cauline ones sharply or incisely-toothed; the base of the stem is lignescent; and the root appears to be perennial. A specimen from the district of Waimea, Hawaii, with more lignescent stems, has only linear or lanceolate leaves; the lower ones, however, are wanting.

14. SENEBIERA, *Poir.*

1. Senebiera didyma, *Pers.*

Senebiera didyma, Pers. Ench. 2, p. 185; Desv. Jour. Bot. 3, p. 164.
S. pinnatifida & *S. pectinata*, DC. Syst. 2, p. 523, & Prodr. 1, p. 202.
Lepidium didymum, Linn. Mant. p. 92.

Hab. Table land east of Funchal, Madeira. Waste grounds about Honolulu, Oahu; and island of Kauai, Sandwich Islands.—For a view of the present geographical diffusion of this species, see Dr. Hooker's Flora Antarctica, p. 241.

15. SINAPIDENDRON, *Lowe.*

Sinapidendron frutescens, *Lowe.*

Sinapidendron frutescens, Lowe, in Camb. Phil. Trans. 4, p. 36.
Sinapis frutescens, Ait. Hort. Kew. ed. 1, 2, p. 404; DC. Syst. 2, p. 623; Hook. Bot. Misc. 1, p. 149, t. 28.

Hab. On dry rocks, Corral, Madeira.

16. RAPHANUS, *Linn.*

1. Raphanus Raphanistrum, *Linn.*

Hab. Rio Negro, North Patagonia; on the coast. Bay of Islands, New Zealand. Auckland Islands.—This *Wild Radish* or *Jointed Charlock* was doubtless carried from Europe, and probably is scarcely naturalized at any of these places, except around the dwellings of the colonists.

17. ISATIS, *Linn.*

1. Isatis tinctoria, *Linn.*

Hab. Corral, Madeira; where the *Dyer's Woad* is probably not truly indigenous.

Ord. CAPPARIDACEÆ.[*]

1. GYNANDROPSIS, *DC.*

1. Gynandropsis pentaphylla, *DC.*

Gynandropsis pentaphylla, DC. Prodr. 1, p. 238; Guill. Zeph. Tait. p. 74; Gray, Gen. Am. Bor. Or. 1, t. 78.
G. affinis, Blume, Bijdr. p. 51; Decaisne, Herb. Timor. p. 97.
Cleome pentaphylla, Linn.; Sims, Bot. Mag. t. 1681.

Hab. Tahiti; in waste places. Now widely distributed over the warmer parts of the world; but doubtless derived from Africa, as indicated by Mr. Brown, in his Appendix to Denham & Clapperton's Narrative.

2. CLEOME, *Linn., DC.*

1. Cleome Sandwicensis, Sp. Nov.

C. herbacea, aculeolata, undique viscoso-pubescens; foliis quinquefoliolatis, floralibus ovatis subcordatis; pedicellis cum calyce hirsuto-viscosissimis; siliqua glabra thecaphoro vix aut ne vix longiore.

Cleome spinosa, Hook. & Arn. Bot. Beech. Voy. p. 78; Walp. Rel. Meyen. p. 251, non Linn.

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[*] *Tovaria pendula*, Ruiz & Pav., has the ovary completely 6–7-celled, as characterized by Hooker (Icones Plantarum, t. 664); but the ovules instead of being inserted over the whole face of the dissepiments, as he figures and describes them, are rather borne on thick, spongy placentæ, which project from the axis into the cells.

HAB. Oahu, Sandwich Islands; on the coast near Honolulu. Also gathered by Lay and Collie, Barclay, and Meyen.

Plant *herbaceous*, clothed with a *viscous pubescence;* the stem, petioles, and midrib of the leaflets *sparsely aculeate* with small and weak prickles; the stipular ones stronger. Cauline leaves of 5 leaflets, which are oblong-lanceolate, one to 2½ inches long, and cinereous on both surfaces with a short and close viscid pubescence. *Floral leaves ovate, slightly cordate,* small, on short petioles, shorter than the very pubescent and somewhat *setose-hispid viscous pedicels.* Calyx hairy and viscous like the pedicels. Petals apparently white, 3 lines long, obovate-oblong, on short claws. *Pod* 1½ to 2 inches long, about 2 lines in diameter, *smooth and glabrous,* terete, crowned with a thick subsessile stigma, raised on a filiform glabrous *stipe* (the carpophore) *of its own length, or very little shorter.*

This species is certainly to be distinguished from *Cleome spinosa* (with which it has been confounded), by its pubescent leaves, and the proportionally longer stipe; as long as the pod itself in most specimens that I have seen, or a little shorter in the single specimen in the collection of the Exploring Expedition. The pod is only half the length of that of *C. pungens.*

2. CLEOME CHILENSIS, *DC.*

Cleome Chilensis, DC. Prodr. 1, p. 194; Gay, Fl. Chil. 1, p. 187; Deless. Ic. Sel. 3, t. 2.

HAB. Above Obrajillo, Andes of Peru: common.

Accords well with the figure in Delessert's Icones, or perhaps with the pruinose-glandular pods a little shorter. The calyx is persistent in one of the specimens, but deciduous in the other.

3. CLEOME DIFFUSA, *Banks, in DC. l. c.*

HAB. Rio Janeiro, Brazil: common in open places.

4. Cleome affinis, *DC. l. c.*

Hab. Rio Janeiro, Brazil: collected with the preceding species.

5. Cleome Richii, Sp. Nov.

C. herbacea, fere glabra, aculeis stipularibus et petiolaribus validis complanatis armata; foliis 5–7-foliolatis; foliolis lanceolatis, costa sæpius aculeata; petalis (albis vel albidis majusculis) anguste oblongis longe unguiculatis; ovario cum thecaphoro eodem subbreviore staminibus multoties brevioribus.

Hab. Rio Janeiro, Brazil: in open places.

Plant *nearly glabrous,* or the branches, pedicels, &c., minutely granulose or glandular-viscous: the stem *herbaceous,* apparently 2 or 3 feet high, rather stout, *armed with short and flattened stout stipular prickles.* Petioles elongated (5 or 6 inches long), grooved above, armed with numerous stout recurved prickles, resembling the stipular ones. *Leaflets* 5 to 7, broadly *lanceolate,* scarcely petiolulate, about 2 inches long, *usually prickly along the midrib* underneath. Floral leaves small and simple, ovate, nearly sessile. Pedicels filiform, 2 inches long. Sepals oblong-lanceolate, 3 lines long, minutely glandular, like the pedicels. *Petals apparently white,* an inch and a quarter in length, including the claw, which is nearly as long as the *narrowly oblong* lamina. Filaments purplish, 2 inches long. Ovary less than 2 lines long, on a stipe of only a line in length. Fruit not seen.

This may prove to be some ill-described species; but I cannot identify it.

6. Cleome dendroides, *Rœm. & Schult.*

Cleome dendroides, Rœm. & Schult. Syst. Veg. 7, p. 28; Hook. Bot. Mag. t. 3296.
C. atropurpurea, Schott, in Schreib. Nachtr. p. 129, ex. Rœm. & Schult.

Hab. Brazil, in the vicinity of Rio Janeiro. (In flower only.)

3. POLANISIA, *Raf.*

1. Polanisia icosandra, *Wight & Arn.*

Polanisia icosandra, Wight & Arn. Prodr. Fl. Ind. Or. 1, p. 22.
P. viscosa, DC. Prodr. 1, p. 242, var. β. fide Wight & Arn.
Cleome icosandra & C. viscosa (excl. syn.) Linn. Spec. p. 672.

Hab. Luzon, near Manilla. St. Jago, Cape de Verde Islands. (Not enumerated by Mr. Webb in his Spicilegia Gorgonea.)

4. CRATÆVA, *Linn.*

Cratæva tapioides, *DC.*

Hab. Rio Janeiro, Brazil, near the coast. (A specimen with mature fruit.)

5. CAPPARIS, *Linn., Endl.*

1. Capparis cynophallophora, *Linn.*

Capparis cynophallophora & C. flexuosa, Linn. Spec. ed. 2, p. 721, ex. DC. Prodr. 1, p. 249.
C. cynallophora, Jacq. Stirp. Amer. p. 158, t. 98.

Hab. Rio Janeiro, Brazil; along the shores.

2. Capparis Brasiliana, *DC. l. c.*

Var. β. longipes: *thecaphoro (pollicari) pedicello paullo longiore.*

Hab. Rio Janeiro, Brazil. (Also gathered by Gardner, No. 5355, and by Sellow.) Distinguished from the ordinary form only by its more elongated thecaphore.

3. Capparis Sandwichiana, *DC.*

Capparis Sandwichiana, DC. Prodr. 1, p. 245; Hook. & Arn. Bot. Beech. Voy. p. 59; Gaudich. Bot. Voy. Bonite, t. 55.

Hab. Sandwich Islands: on Diamond Hill, Oahu; and on the coast of Kauai and Hawaii. (First collected by Menzies in Vancouver's Voyage.) Matia, Society Islands; where it was gathered in Beechey's Voyage.

This is distinguished from *C. spinosa* (which is sometimes unarmed), by its longer petioles (only *one-third* shorter than the blade) and its elongated, club-shaped fruit, 2½ inches long and half an inch in thickness, raised on a stipe of 3 inches in length.—The letter-press answering to the plate above-cited, is not yet published.

4. Capparis Richii, Sp. Nov.

C. scandens; stipulis spinosis brevibus uncinatis interdum nullis; foliis ovato-oblongis nunc lanceolatis seu lineari-lanceolatis subacuminatis basi obtusis subcoriaceis, novellis cum ramulis calycibusque ferrugineo-puberulis, adultis glabris subcoriaceis; pedicellis 5 *seriatim supra-axillaribus petiolum subæquantibus; floribus parvis; staminibus circiter* 12.

Hab. Feejee Islands; the narrow-leaved forms from the Muthuata Mountains, and Direction Island.

Stem woody, *climbing*, smooth, the branches slender, minutely ferrugineous-pubescent when young, armed with very *short and stout hooked prickles in the place of stipules*, which, however, are nearly wanting in some of the broader-leaved specimens. *Leaves very variable*, or diverse even upon different branches of the same stem, 2½ to 4 inches long, clothed with a ferrugineous pubescence when very young, soon glabrous, rather coriaceous, reticulated, either *ovate* or *oblong-ovate* and *somewhat acuminate*, or *oblong-lanceolate*, varying in some specimens into *lanceolate* or even *linear*, *the base* rather narrowed but *obtuse*, not in the least cordate: petioles 4 to 6 lines long, of the narrower leaves only 2 or 3 lines long, ferrugineous-pubescent. *Pedicels* about 5, inserted one above the other in the axil of the leaves (*supra-axillary*), *nearly the length of the petiole*, and with the flower-bud similarly ferrugineous-pubescent. Flower-buds not more than a line in length, gibbous. Stamens apparently 12. Ovary on a long stipe: placentæ 4. Fruit unknown.

A species of the group *Eucapparis Seriales*, which should be collated with *Capparis quiniflora*, DC., from the northern coast of New Holland, known only by a very brief character. It cannot be *C. flexuosa*, Blume, since this, according to Hasskarl (Plantæ Jav. Rar. p. 178) has 38 stamens, while ours has no more than 12. For the details of the flower I am obliged mainly to depend upon a drawing, executed under the superintendence of Mr. Rich. Greatly as the leaves vary in shape in the different specimens, I suppose that they all belong to one species. At least, as they are not in flower, there are no means of characterizing the narrow-leaved forms as a distinct species.

5. CAPPARIS AURANTIOIDES, *Presl.*

Capparis aurantioides, Presl. Rel. Hænk. 2, p. 86; Walp. Repert. 1, p. 198.
C. nemorosa, Blanco, Fl. Filip. p. 438?

HAB. Philippine Islands, at Caldera, Mindanao; and Sooloo Islands.

This also belongs to the division *Seriales*; the pedicels, sometimes five in number, being superposed above the axil.

6. CAPPARIS SEPIARIA, *Linn.*

HAB. Small island of the Sooloo Sea. A widely diffused, East Indian species.

7. Capparis cerasifolia, Sp. Nov.

C. inermis, aut stipulis spinosis fere obsoletis; foliis oblongo-lanceolatis acuminatis basi obtusis membranaceis laxe venosis, novellis ramulisque sericeis, adultis glabratis; pedicellis axillaribus petiolo sublongioribus solitariis vel sæpius 2–3 *e gemma subulato-perulata cum calyce thecaphoro et ovario tomentulosis; staminibus circiter* 12.

Hab. Small island of the Sooloo Sea.

Stem shrubby, glabrous, *unarmed or nearly so;* the minute spinescent stipules mostly deciduous. *Leaves oblong-lanceolate, much acuminate, membranaceous, obtuse at the base, silky-pubescent when young,* as well as the branchlets, at length glabrous and rather shining above and nearly glabrous beneath; the lower surface with 5 or 6 pairs of conspicuous primary veins: the minute veinlets reticulated. Petioles 3 or 4 lines long. Pedicels axillary, 3 to 5 lines long, one-flowered, tomentose-pubescent, as is the calyx, stipe, and ovary, sometimes solitary, more commonly 2 or 3 together from a small axillary bud or cluster of minute scales and spinescent bracts like the stipules. Flower-bud scarcely 2 lines long. Calyx and petals nearly as in *C. pubiflora*, DC., as figured by Delessert; the petals somewhat pubescent externally at the apex. Stamens not more than 12. Stipe of the ovary as long as the pedicel. Placentæ only 2. Fruit not seen.

This species is evidently related to *Capparis pubiflora*, DC.; from which its unarmed stems, longer and narrower leaves, smaller flowers, and few stamens readily distinguish it. It is the same as Cuming's No. 1068, from the Philippine Islands; and is allied to his No. 955, but has longer pedicels and thinner leaves, which are much less silky-tomentose when young.

8. Capparis odorata, *Blanco?*

Capparis odorata, Blanco, Fl. Filip. p. 439?

Hab. Vicinity of Manilla, Luzon. (Without flowers or fruit.)

ORD. PANGIACEÆ.

1. CARPOTROCHE, *Endl.*

CARPOTROCHE, Endl. Gen. no. 5066 (non Walp. Repert. 1, p. 203).
MAYNA, Raddi, Pl. Nov. Bras. p. 23, f. 1; Zucc. Pl. Nov. Hort. & Herb. Monac. fasc. 2, p. 55, t. 5, 6.

1. CARPOTROCHE BRASILIENSIS.

Mayna Brasiliensis, Raddi, l. c.; DC. Prodr. 1, p. 79; Zucc. l. c.

HAB. Brazil, near Rio Janeiro.

The specimen has only male flowers, and affords nothing to add to Zuccarini's full description and figures. Walpers has without any reason referred to *Carpotroche* three species of *Mayna* described by Bentham, which manifestly belong to Presl's *Lindackeria;* a genus which Mr. Bentham has shown to be most probably identical with *Mayna* of Aublet.* It was Mr. Brown† who referred the present genus to the family which Blume afterwards published under the name of *Pangiaceæ:* but Mr. Bennett's character of the family appears to be framed so as to apply only to *Pangium*, *Gynocardia*, and *Hydnocarpus*. In several particulars, none of them of any high importance indeed, it does not accord with the character of *Carpotroche*.

BIXINEÆ.—*Bixa Orellana*, Linn., the tree which yields the well-known colouring matter named *Arnotto* by the English, and *Rocou* by the French, occurs in the collection from the Sandwich Islands: but it is stated on the ticket to be only a cultivated tree, in gardens, in the vicinity of Honolulu. A native of tropical America, it is now widely distributed through the warmer parts of the world.

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* Hook. Kew Bot. Misc. and Jour. Bot. 3, p. 117.

† Zuccarini, Pl. Nov. supra cit. p. 60; Bennett, Plantæ Javanicæ Rariores, p. 190.

ORD. FLACOURTIACEÆ.

1. PROCKIA, *P. Browne.*

PROCKIA, P. Browne, in Linn. Gen. no. 647; Bennett, Pl. Jav. Rar. p. 191.
PROCKIA, § PROCKIARIA, DC. Prodr. 1, p. 260; Endl. Gen. no. 5072.

1. PROCKIA CRUCIS, *Linn.*

Prockia completa, Hook. Ic. Pl. 1, t. 94; Walp. Repert. 1, p. 204.

HAB. Brazil, in the Organ Mountains, near Rio Janeiro.

2. KUHLIA, *H. B. K.*

1. KUHLIA PARVIFLORA, Sp. Nov.

K. foliis oblongis acuminatis remote glanduloso-serratis basi subinæqualibus tripli–quintuplinerviis utrinque viridibus; panicula composita; floribus minimis.

HAB. Brazil, in the Organ Mountains, near Rio Janeiro.

A shrub or small tree, apparently: the branchlets slender, minutely verrucose, glabrous. *Leaves oblong*, or oblong-lanceolate, more or less *acuminate, remotely serrate* with *glandular*-tipped or glandular-truncate teeth, more or less obtuse and *rather unequal at the base*, which is *triplinerved* or *quintuplinerved* (the lateral nerves fainter or marginal), glabrous, of the same green hue both sides, thin and chartaceous in texture, reticulate-veined, alternate, 2 or 3 inches long. Petioles 3 lines long. Stipules minute, subulate, caducous. *Panicle* compound, terminal, many-flowered; its branches, with the subulate bracts, the short pedicels, &c., minutely and softly pubescent. *Flowers very small;* the flower-buds less than half a line in diameter, globular, glabrous or nearly so. Perianth in two distinct series, each three-parted; the three exterior segments (sepals) broadly ovate, obtuse, nearly if not strictly valvate in early æstivation, but their margins more or less separated before the bud has attained its full growth, their edges minutely ciliate; the three inner (equivalent to the petals of *Banara* and *Prockia*) united with the exterior at the base, rather larger than they and more ciliate, but nearly similar in texture, obovate, their overlapping summits strongly imbricated in æstivation, yellowish inside, spreading in anthesis. Disk none. Stamens from 15 to 20, inserted into the base of the perianth: filaments filiform, yellowish, twice the length of the perianth: anthers didymous. Ovary ovoid-conical, one-celled, narrowed into a short and thickish style, which is tipped with an obtuse and obscurely three-lobed stigma. Placentæ 3, parietal, occupying the whole length of the cell, into which they slightly project. Ovules indefinitely numerous, in several series, anatropous. Fruit unknown.

In habit as well as in floral structure, this plant is manifestly a congener of *Kuhlia glauca* of Kunth. I ought perhaps to follow the high authority of Mr. Bennett,* who pronounces *Kuhlia* not to be generically distinct from *Azara*. But it appears to me, that the biserial perianth (as truly double as that of *Banara*), the exterior subvalvate, the inner strongly imbricated, along with the difference in habit, stipulation, and inflorescence, should serve to distinguish them.

To the genus, if preserved, belongs another Brazilian plant, namely *Azara Brasiliensis*, Schott, in Spreng. Syst. Cur. Post., p. 407, of which I have received a specimen from Professor Von Martius. The same species is rudely figured in the Flora Fluminensis, 5, t. 115, under the name of *Boca serrata*. *Kuhlia Brasiliensis*, as it must be called, is distinguished by its thick and coriaceous leaves and large flowers; the inner divisions of the perianth two lines or more in length, and nearly equalling the stamens. The fructified ovary shows no tendency to become spuriously several-celled. The Linnæan genus *Trilix* is probably the same as *Banara*.*

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* Plantæ Javanicæ Rariores, p. 190.

3. AZARA, *Ruiz & Pav.*

1. Azara celastrinea, *Don.*

Azara? celastrinea, Don, in Edinb. Phil. Jour. 11, p. 119; Gay, Fl. Chil. 1, p. 195. *A. Lilen* & *Lilenia dentata*, Bertero, herb.

Hab. Near Valparaiso, Chili: common.

2. Azara integrifolia, *Ruiz & Pav.*

Azara integrifolia, Ruiz & Pav. Syst. p. 138, & Fl. Per. & Chil. 5, (ined.) t. 466; DC. Prodr. 1, p. 262; Gay, Fl. Chil. 1, p. 199.

Hab. Chili, with the preceding: also at Santiago.

Another species, probably *A. serrata*, Ruiz & Pav., is mentioned in Dr. Pickering's notes; but it is not found in the collection.

4. FLACOURTIA, *L'Her.*

1. Flacourtia inermis, *Roxb., DC.*

Hab. Singapore.

The specimen, in flower only, agrees perfectly with those from the Peninsula of India, distributed by Dr. Wight.

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* From a collection made by M. Claude Gay, in the province of Cusco, Peru, I have received, under the name of *Blackwellia*, a male specimen of what appears to be a true congener of *Banara mollis* and *B. Ibaguensis*, Tulasne, in Ann. Sci. Nat. 3d ser. 7, p. 288, except that it is polygamo-diœcious. The abortive ovary shows five placental lines, which, however, are not ovuliferous.

5. XYLOSMA, *Forst.*

Xylosma, G. Forst. Prodr. Fl. Ins. Austr. p. 72; Bennett, Pl. Jav. Rar. p. 191.
Myroxylon, J. R. Forst. Char. Gen. p. 125, t. 63, non Mutis.

1. Xylosma suaveolens, *Forst.* (Tab. 4).

X. foliis ovatis crenato-subserratis chartaceis; calyce 4–5-partito, lobis acutis.

Xylosma suaveolens, G. Forst. Prodr. no. 380; Guill. Zeph. Tait. p. 76.
Myroxylon suaveolens, J. R. Forst. l. c. & MS. descr. in Zeph. Tait. l. c.

Hab. Tahiti, Society Islands, in forests on the mountains: also, on Eimeo.

A small tree, or a shrub, with a reddish and sweet-scented, hard wood, according to Forster. Branches, leaves, &c., glabrous. *Leaves* alternate, thin and *chartaceous* in texture, 2 or 3 inches long, *ovate*, sometimes ovate-oblong, more or less acute or acuminate, obtuse or acutish at the base, rather *obscurely crenate-serrate*, the teeth tipped with a small callous gland, loosely reticulate-veined, the narrow midrib prominent underneath, the upper surface somewhat shining: petiole half an inch long. Flowers diœcious, small, greenish or yellowish, in loose axillary and terminal corymbulose clusters. Peduncle very short. Pedicels about 3 lines long, articulated near the base, subtended by small ovate and scale-like bracts. *Calyx deeply 4–5-cleft*, or in the female flowers 4–5-parted, apparently yellowish-green, nearly glabrous externally, silky-pubescent internally; the *lobes* ovate, *acute*, ciliate on the margin (imbricated in æstivation). Petals none. Disk annular, hypogynous, at least in the female plant, glandular and fleshy, the margin 8–10-lobed. *Male flowers:* of these only a single one is left on the specimen. The calyx resembles that of the fertile flowers, except that it is less deeply cleft. Stamens indefinitely numerous: filaments subulate-filiform, twice the length of the calyx: anthers *extrorse*, two-celled, didymous, not appendiculate. *Female flowers* not seen, except the calyx (with the disk) persistent at the base of the advanced or ripened pistil. Fruit baccate, oblong-ovoid, 3 or 4 lines long, a little narrowed at the base, the apex pointed with an extremely short style, which is tipped with a depressed or somewhat peltate two-lobed persistent stigma, one-celled, with 2 parietal placentæ. The ovules are from 2 to 4 on the upper part of each placentæ, oval, pendulous, anatropous. Seeds 4 to 6, or by abortion 2, one pendulous from the upper portion of each placenta, on a thickish funiculus, pretty large, so that the two fill the cell, obovate; the testa smooth and even, marked with a narrow raphe and an apical chalaza. Embryo as long as the fleshy albumen, straight: radicle cylindrical, superior: cotyledons foliaceous, cordate-oval.

According to Forster, the fragrant wood of this tree is steeped in cocoa-nut oil, which, thus scented, is used by the Tahitians to anoint their hair. I find no allusion to this custom as still existing, however, in the Narrative of the Expedition, or in Dr. Pickering's volume; further than that, in the former, it is said that "this oil is often scented with aromatic herbs, to be employed by the natives in anointing the hair and body." Except our imperfect specimens, the plant does not appear to have been collected by any botanist since Cook's voyage; but Guillemin has printed Forster's manuscript description of the plant, and Mr. Bennett has recently given, from Forster's specimen and drawing preserved in the Banksian herbarium, an amended generic character. The structure of the seed and embryo, however, are not stated; and on all accounts it is desirable to figure the plant, even from the incomplete materials which our collection affords.

PLATE 4, *A*.—XYLOSMA SUAVEOLENS. Fig. 1. A branchlet of the staminate plant, in flower. 2. Exterior, and 3, interior view of a stamen, magnified. 4. Pistillate plant, in fruit. 5. Calyx and the disk. 6. A longitudinal, and 7, a transverse section of the fruit, with the persistent calyx. 9. A seed. 10. A longitudinal, and 11, a transverse section of the seed.—The details are all variously magnified.

2. Xylosma orbiculatum, *Forst.* (Tab. 4).

X. foliis ovato-orbiculatis coriaceis integerrimis; calyce breviter quadrifido, lobis obtusissimis.

X. orbiculatum, G. Forst. Prodr. Fl. Ins. Austr. p. 72.
Myroxylon orbiculatum, J. R. Forst. Char. Gen. p. 126.

Hab. Island of Tongatabu.

Of this species, also, the collection contains only a poor specimen, with male flowers. The *leaves*, about 3 inches long, and 2½ inches wide, are *rounder*, of a thicker and more *coriaceous* texture than those of the preceding species, and *quite entire*. The male inflorescence and flowers, however, are similar, except that the *calyx* is not so deeply *four-cleft*, and its rounded *lobes very obtuse*.

Plate 4, *B.*—Xylosma orbiculatum. A branch of the staminate plant, in flower. Fig. 1. A flower, magnified. 2. Vertical section of the same. 3. Calyx, with the disk. 4, 5. Interior and exterior view of a stamen, more magnified.

ORD. SAMYDACEÆ.

1. CASEARIA, *Jacq., Endl.*

§ 1. PITUMBA (Aubl. Pl. Guian. 2, t. 385), Benth. in Hook. Jour. Bot. 4, p. 110.

1. CASEARIA OBLONGIFOLIA, *Camb.*

Casearia oblongifolia, Camb. in St. Hil. Fl. Bras. Mer. 2, p. 234; Mart. Herb. Bras. no. 469, p. 272.
Bigelovia Brasiliensis, Spreng. Neue Entd. 2, p. 150, t. 2, f. 1–6.
Samyda Selloi, Spreng. Syst. Veg. 2, p. 354.

HAB. Near Rio Janeiro, Brazil.

After Martius, I adduce the synonyme of Sprengel; but the plate above cited represents the stamens as exserted, and gives no squamæ or sterile filaments. One of our specimens accords with those distributed by Martius; the others have mostly larger leaves, more inclined to obovate, and more cuneate at the base. It is in Salzmann's collection from Bahia, under the name of "Vaccinium laurifolia." It belongs to the section *Pitumba*.

2. CASEARIA INÆQUILATERA, *Camb.*

Casearia inæquilatera, Camb. in St. Hil. Fl. Bras. Mer. 2, p. 237, t. 127.

HAB. Brazil, with the preceding species.

3. CASEARIA AFFINIS, *Gardn.*

Casearia affinis, Gardn. in Hook. Lond. Jour. Bot. 1, p. 529.
C. parviflora, Camb. in St. Hil. Fl. Bras. l. c., non Willd.

HAB. Near Rio Janeiro, Brazil: probably from woods on the Corcovado, where Gardner found the plant.

Our specimen bears ripe fruit only, which is exactly globose, mostly one-seeded, about 4 lines in diameter, and tipped with a short persistent style, which appears to be entire.

4. CASEARIA? ACUMINATISSIMA, Sp. Nov.

C. glabra; foliis nitidis oblongo-lanceolatis longe acuminatis basi rotundatis vix punctatis subintegerrimis; fructu obovato-globoso trivalvi monospermo.

HAB. Sandal-wood Bay, Vanua-levu, one of the Feejee Islands. (In fruit only.)

The specimen consists of a branch of a *glabrous* shrub or small tree, with ripe fruit. The *leaves* are *oblong-lanceolate*, with a *long and slender acumination* and a *rounded base:* they are chartaceous in texture, smooth and *shining* both sides, copiously feather-veined, *mostly entire*, occasionally showing a few minute teeth, obscurely if at all pellucid-punctate, 2 or 3 inches long, an inch or less in width: the petioles a line and a half in length. Stipules minute. Flowers not seen. They appear to have been solitary in the axils of leaves (which have mostly fallen) of the slender axillary branchlets of the season. Pedicels in fruit 4 or 5 lines long. *Fruit obovate-globose*, naked, 4 lines long, tipped with a short and apparently entire persistent style, probably fleshy and becoming coriaceous, glabrous, one-celled, tardily *three-valved* from the apex, filled with a *single seed*. The vestiges of numerous ovules are still visible, however, on 3 filiform, parietal placentæ. The solitary seed is globular, nearly 3 lines in diameter; its dark-coloured crustaceous testa covered with a thin and fleshy pellicle; its base marked with a circular impressed raphe; the micropyle superior, apiculate. Albumen fleshy, rather soft. Embryo in the axis of the albumen next the micropyle, straight, fully half the length of the albumen: radicle superior, about the length of the flat, orbicular-cordate cotyledons.—The flowers are needed for the certain determination of the genus.

§ 2. MELISTAURUM. (*Melistaurum*, Forst.)—*Stamina fertilia* 10. *Stigma subsessile, crassum. Ovula in placentis pauca.*

5. Casearia disticha. (Tab. 5.)

C. foliis oblongis seu ovali-oblongis membranaceis crebre punctatis brevissime petiolatis; floribus e gemma axillari pluribus parvis subsessilibus; filamentis fertilibus glabris; stigmate integerrimo.

Melistaurum distichum, Forst. Char. Gen. p. 143, t. 72? ideo
Samyda polyandra, Willd. Spec. Pl. 2, p. 626? et
Casearia Melistaurum, DC. Prodr. 2, p. 51?

Hab. Sandal-wood Bay, Vanua-levu, one of the Feejee Islands.

A tree or shrub (its size not recorded), glabrous throughout, with flexuous branches. *Leaves oblong, or oval-oblong*, the lower inclining to ovate, acutish or obtusely acuminate, *membranaceous*, entire, thickly *punctate* with round and oblong pellucid dots, from 3 to 5 inches long, on petioles of about 2 lines in length: the leaves are distichously arranged. Stipules very minute. *Flowers very small* (barely a line in length), crowded *in a sessile axillary glomerule* or capitulum, *on very short pedicels*, subtended by minute scaly bractlets. Sepals 5, obovate, longer than the stamens. Stamens monadelphous at the base: *fertile* ones 10, in two ranks, the five exterior shorter: their *filaments* subulate and *glabrous:* anthers didymous. Sterile filaments 10, interior, subulate, nearly equalling the shorter fertile series, villous-bearded. Ovary conoidal, glabrous, one-celled, with 3 parietal placentæ, each bearing 4 to 6 ovules in two series. *Style none*, or a mere contraction at the apex of the ovary. *Stigma thick*, depressed-capitate, *entire*. Fruit not seen.—In one specimen nearly all the flowers are in an abnormal or diseased state; when they are enlarged, and the deformed sterile filaments are exserted in the form of horns or callous processes. The larger flowers of the specimen figured are more or less thus affected.

This plant is, I suspect, not specifically different from Forster's *Melistaurum distichum*, from New Caledonia, of which only the generic characters were ever published. The specimen preserved in the British Museum, however, has larger leaves than ours. Forster supposed his plant to be polygamo-diœcious, and that he had only male flowers; which may be the case; but the flowers I have examined in our specimen are hermaphrodite. They accord with the *Caseariæ* of the section *Pitumba*, except in the sessile, or nearly sessile, and thickened stigma, and the fewer ovules;—characters which may serve to define a sixth section of the genus.

Plate 5, *A.*—Casearia disticha. Fig. 1. An expanded flower, magnified. 2. Andrœcium displayed, magnified. 3. A portion of the same, more magnified (inside view). 4. Exterior view of one of the stamens. 5. The pistil, magnified.

6. Casearia Richii, Sp. Nov. (Tab. 5.)

C. foliis ovatis subacuminatis vix punctatis subcoriaceis modice petiolatis distichis; floribus minimis e gemma axillari fasciculatis subsessilibus; filamentis fertilibus inferne ciliatis; stigmate subtrilobo.

Hab. Ovolau, Feejee Islands.

A close congener of the foregoing species; from which it is distinguished by its much smaller and crowded *ovate and somewhat taper-pointed leaves* (from one to 2 inches long), of a *rather coriaceous* texture, *very obscurely punctate*, and on petioles of greater proportional length: they are equally distichous, smooth, and entire. The flowers are apparently still smaller, from similar *axillary and sessile buds.* Their *fertile filaments*, moreover, are *ciliate below the middle;* the ovary is more ovoid; and the depressed-capitate and sessile *stigma is somewhat three-lobed.*

Plate 5, *B.*—Casearia Richii. Fig. 1. Diagram of the flower. 2. Vertical section of the flower. 3. A stamen, with a sterile filament; inside view. 4. A stamen, outside view. 5. The pistil.—The analyses all magnified.

ORD. VIOLACEÆ.

1. VIOLA, *Linn.*

* *Antarcticæ.*

1. VIOLA TRIDENTATA, *Menzies.*

Viola tridentata, Menzies, in Herb. Banks; DC. Prodr. 1, p. 300; Hook. f. Fl. Antarc. p. 245.

HAB. Orange Harbour, Fuegia.

This remarkable Violet has recently been admirably characterized by Dr. Hooker. The stipules are wholly adnate to the petiole, which is thus scariously winged; the only free portion is a minute herbaceous tooth at the base of the blade on each side, and this is often wanting. The leaves somewhat resemble the leaflets of *Potentilla tridentata.* The stems are suffrutescent.

2. VIOLA COMMERSONII, *DC.*

Viola Commersonii, DC. Prodr. 1, p. 297; Hook. f. Fl. Antarc. p. 245.

HAB. Orange Harbour, Fuegia.

Two diminutive specimens of this rare species occur in the collection, mixed with those of the succeeding. It has been found only by Commerson, Mr. Darwin, and in this Expedition.

3. VIOLA MAGELLANICA, *Forst.*

Viola Magellanica, Forst. in Comm. Gœtt. 9, p. 41, t. 8; DC. Prodr. 1, p. 297; Hook. f. Fl. Antarc. p. 244.

HAB. Orange Harbour, Fuegia.

Some of the specimens are no larger than those of *V. Commersonii;* others have scapes fully a span in height, and leaves and flowers as large as those of *V. odorata.* I am by no means sure that the corolla is yellow. It bears some later flowers which are much smaller than the others.

* * *Australasicæ.*

4. VIOLA HEDERACEA, *Labill.*

Viola hederacea, Labill. Fl. Nov. Holl. 1, p. 66, t. 91; DC. Prodr. 1, p. 305; Hook. Exot. Fl. 3, t. 225.
Erpetion hederaceum, petiolare, & reniforme, Don, Syst. Gard. & Bot. 1, p. 335.

HAB. Sydney, New South Wales; the form with the leaves reniform-truncate, or a little cuneate at the base: Woolongong; the form with round-reniform and mostly toothed leaves. They all manifestly belong to one polymorphous species.

5. VIOLA SIEBERIANA, *Spreng.*

Viola Sieberiana, Spreng. Syst. Cur. Post. p. 96.
V. spathulata, Sieber, Pl. Nov. Holl. no. 406, non Willd.
V. Sieberi, Hook. Comp. Bot. Mag. 1, p. 274; Hook. f. Jour. Bot. 2, p. 406.

HAB. Near Sydney, New South Wales.

This can scarcely be confounded with any form of the preceding species.

* * * *Sandwicenses.*

6. Viola Kauaensis, Sp. Nov.

V. caulibus gracilibus repentibus; foliis subcordato-rotundis coriaceis nervosis appresse serratis, dentibus glanduliferis; stipulis squamaceis ovato-lanceolatis acuminatis setigero-dentatis; petalis cœruleis calyce subbrevioribus (an semper?), inferiore haud calcarato.

Hab. On mountains of Kauai, Sandwich Islands, with *Drosera longifolia.*

Stems, or stolons, *creeping*, flexuose, rather *slender*, glabrous, furnished with rather large, ovate or *ovate-lanceolate, squamaceous and brownish stipules*, of which the upper ones are narrower and more acuminate; all beset with sharp or *bristle-shaped and glandular-tipped teeth. Leaves* mostly crowded at the extremity of the floriferous stolons, *rounded and slightly cordate*, or somewhat reniform, but with the base more or less cuneate-decurrent into the slender petiole, *coriaceous*, thickly punctate, an inch or less in diameter, closely *serrate with obtuse and inflexed-appressed teeth*, which bear a gland at their apex, the surface strongly *nerved* or nervose-veined, and glabrous in the specimens, although said to be hairy in Dr. Pickering's note of the locality, &c. Peduncles 1½ to 2 inches long, nearly the length of the petioles, glabrous, furnished with a pair of linear-lanceolate, slightly glanduliferous bractlets a little below the flower. Sepals oblong-lanceolate, glabrous, thickened and produced at the base. "*Petals pale blue*," according to Dr. Pickering's notes. The flowers of the specimens are probably late ones, with the petals smaller than when fully developed, as they are *not quite so long as the calyx:* they are oblong-spatulate; *the lower* one a little larger than the others, and only *inconspicuously saccate* at the base; all of them smooth and beardless. What strengthens the suspicion that these are only such precociously fertilized and cryptopetalous flowers as are produced by many Violets is, that the stamens are scarcely shorter than the petals, all with distinct and rather narrowed filaments, which are longer than the oblong anther-cells, and similar, except that the two lower ones are rather larger: the connective in these merely carinate on the back, but not at all spurred. The style, also, is very short, thick, and uncinate-cucullate. In this view, the species may be compared with *Viola sarmentosa*, of Oregon, from which, however, it is abundantly distinct. But if these are the normal flowers, the species must be ranked with the Australian *V.* (*Erpetion*) *hederacea;* and it has a similar mode of growth.

7. VIOLA CHAMISSONIANA, *Ging.* (Tab. 6.)

V. caule fructicoso erecto; foliis oblongo-ovatis subcordatis acuminatis serrulatis, ramealibus basi nunc acutis; stipulis ovatis lanceolatisve acuminatis sæpe denticulatis; calcare brevi late saccato; antheris apice subulato-appendiculatis.

Viola Chamissoniana, Gingins, in Linnæa, 1, p. 408, &
V. tracheliifolia, Gingins, l. c. p. 409.

HAB. Oahu, Sandwich Islands; on the Kaala Mountains, and in the vicinity of Wailuka.

Stems upright, from one to 6 feet high, *woody*, and from one-eighth to more than half an inch in thickness, branching above, the branches annulate with the cicatrices of former leaves and stipules, glabrous. *Leaves* ovate, or mostly *oblong-ovate, and somewhat cordate, acuminate, serrulate* with rather appressed glandular-tipped teeth, glabrous, or a little pubescent beneath when young, membranaceous or chartaceous, veiny; the principal cauline ones from 3 to 6 inches long, mostly subcordate, and not unlike those of *Trachelium cæruleum;* their petioles one or two inches long: leaves of the flowering branches successively smaller and shorter petioled, merely obtuse or *the upper acute at the base. Stipules* scale-like in texture, brownish, small; the lower *triangular-ovate*, the uppermost *lanceolate, acuminate*, either entire or beset with a few lacerate or setaceous teeth, which are usually glandular-tipped. Peduncles axillary, half an inch to an inch long, 1–2-bracteolate above the middle; the bractlets lanceolate-subulate. Flower 6 to 8 lines long. Sepals very little produced at the base, linear-lanceolate; the two lower sometimes a little broader and shorter than the others. Petals apparently light blue or violet, oblong-spatulate, beardless, nearly equal, the lower one broadly *sac-*

cate-calcarate at the base. *Anthers* glabrous, *tipped with a slender subulate appendage;* the two lower bearing a thick and short very obtuse spur on the back. Style sigmoid-curved, thickened and gibbous at the apex, terminated by a unilateral truncate stigma. Capsule ovoid-oblong, smooth. Seeds as in the genus: none were seen with a matured embryo.

Gingins' *V. Chamissoniana*, of which I have seen an authentic specimen in the Hookerian herbarium, was evidently described from a plant that wanted the principal cauline leaves, which are more or less cordate. It is clearly the same species as the *V. tracheliifolia* of the same author, who took the character from a drawing made by Chamisso. The plant varies greatly in height, and in the size of its leaves, &c. The only discrepancy between our specimens and the description of Gingins is in the appendage of the anthers, which he states to be obtuse, without mentioning its form; while in our plant it is reduced to a narrow and subulate process.

PLATE 5.—VIOLA CHAMISSONIANA: the summit, with the base of the woody stem. Fig. 1. A young seedling plant. 2. Stipules, enlarged. 3. Diagram of the flower. 4. A flower, enlarged. 5. Same, with calyx and corolla removed. 6. Three detached petals. 7. A back view, and 8, a front view of one of the two lower stamens, magnified. 9. A back view, and 10, a front view of one of the three upper stamens, equally magnified. 11. Pistil, with the ovary longitudinally divided. 12. A seed, magnified.

2. IONIDIUM, *Vent.*

1. IONIDIUM MONOPETALUM, *Rœm. & Schult.*

Ionidium monopetalum, Rœm. & Schult. Syst. Veg. 5, p. 400.
Pigea monopetala & P. filiformis, DC. Prodr. 1, p. 307.
Solea monopetala, Spreng. Syst. Veg. p. 804.

HAB. Near Sydney, New South Wales.

The ample lower petal is either slightly emarginate or entire.

3. NOISETTIA, *H. B. K.*

1. NOISETTIA LONGIFOLIA, *H. B. K.*

Noisettia longifolia, H. B. K. Nov. Gen. & Spec. 5, p. 382, t. 499; DC. l. c.; St. Hil. Pl. Rem. Bras. p. 385, t. 26.
N. orchidiflora, Ging. in DC. Prodr. 1, p. 290.
Viola longifolia, Poir. Dict. 8, p. 649.
V. orchidiflora, Rudge, Pl. Guian. Rar. 1, p. 111, t. 10.
Ionidium longifolium & I. orchidiflorum, Rœm. & Schult. Syst. Veg. 5, p. 398, 400.

HAB. Organ Mountains, near Rio Janeiro, Brazil.

4. ANCHIETEA, *St. Hil.*

1. ANCHIETEA SALUTARIS, *St. Hil.*

Anchietea salutaris, St. Hil. Pl. Us. Bras. t. 19, Pl. Rem. Bras. p. 290, & Fl. Bras. Mer. 2, p. 141.
Noisettia pyrifolia, Mart. & Zucc. Nov. Gen. & Spec. Bras. 1, p. 24, t. 16.
Viola summa, Velloz. Fl. Flum. 8, t. 161.

HAB. In the vicinity of Rio Janeiro, Brazil. (In flower only.)

5. AMPHIRROX, *Spreng.*

1. AMPHIRROX LONGIFOLIA, *Spreng.*

Amphirrox longifolia, Spreng. Syst. Cur. Post. p. 51, & 99.
Spathularia longifolia, St. Hil. Pl. Rem. Bras. p. 318, t. 28, & Fl. Bras. 2, p. 107.

HAB. Near Rio Janeiro, Brazil.

The specimen bears ripe fruit only. The capsule is ovoid-triangular, or somewhat three-lobed, nearly an inch long, papillose; the valves crustaceo-coriaceous. Seeds numerous upon each of the three placentæ, 2½ lines long, obovate, with a smooth testa, marked with a slender rhaphe and a broad apical chalaza. Embryo not seen in the seeds examined.

6. AGATEA, Nov. Gen.

Calyx pentaphyllus subæqualis, basi haud productus, deciduus. Corollæ petala 5, hypogyna, erecta, inæqualia; postica lateralibus paullo minora; anticum majus, labelliforme, spathulatum, basi dilatatum gibboso-saccatum. Stamina 5, diadelpha, nempe; filamenta brevia, plana, antica (singula glandula carnosa aucta) et lateralia marginibus connata, posticum angustius distinctum: antheræ introrsum adnatæ, loculis appositis apice liberis mucronatis; connectivo in appendicem petaloideam latam producto. Ovarium globosum, placentis parietalibus 3 plurioculatis. Stylus apice clavatus, subcurvatus: stigma laterale. Fructus baccatus? — Frutex sarmentosus; foliis alternis oblongis subintegerrimus ramisque glabris; stipulis minimis caducis; racemis paniculisve axillaribus multifloris; pedicellis 2–3-bracteolatis infra apicem articulatis; floribus parvis viridulis.

1. AGATEA VIOLARIS, Sp. Nov. (Tab. 7.)

Var. *α. foliis oblongo-lanceolatis integerrimis vel obsolete repandis paniculas subæquantibus.*

Var. *β. foliis majoribus ovato-oblongis nunc repando-subdentatis paniculas excedentibus.*

HAB. Feejee Islands: the var. *α.* from Naloa Bay. Var. *β.* Ovolau.

A *shrubby, sarmentose*, or somewhat climbing plant, entirely *glabrous*, except the inflorescence. Branches slender, leafy to the top. *Leaves alternate*, thin, chartaceous in texture, smooth, in the specimen from Naloa Bay (var. *α.*) oblong-lanceolate, 3 or 4 inches in length, and an inch or less in breadth, *entire* or sometimes obscurely repand; in the specimen from Ovolau, broader and mostly oblong-ovate, 3½ to 5 inches long and 1½ to 2½ wide, the larger ones obsoletely repand-toothed; all more or less acuminate, loosely pinnately veined. Petioles half or three-quarters of an inch in length. *Stipules very minute,* squamaceous, triangular, *caducous.* Inflorescence from the axils of the upper leaves, and terminal, minutely tomentose-pubescent; the flowers numerous, in compound and paniculate, or occasionally simple *racemes,* which in var. α. often exceed the leaves, but in β. (in which, however, the flowering is less advanced) are much shorter. Peduncles and pedicels slender; the latter 3 or 4 lines long, recurved or drooping, subtended by a minute scale-like bract, and furnished with 2 or 3 mostly alternate *bractlets* resembling the bract, articulated a little below the flower and above the uppermost bractlet. *Calyx* small, about one-quarter of the length of the larger petal, *deciduous* after flowering, *of 5 distinct sepals:* these are imbricated in æstivation, *not appendaged at the base,* greenish, ovate or oblong-ovate, pubescent-ciliate, somewhat unequal; the two lateral, which are exterior in the bud, being a little shorter than the others. *Corolla hypogynous, of 5 erect and unequal* (greenish white) *petals,* obliquely imbricated in æstivation, namely with one (of the two posterior) exterior, and one (the anterior and saccate one) interior, in the manner of *Viola, Ionidium,* &c. All the petals are obscurely ciliate, and not unguiculate; the two posterior linear-oblong, with their tips somewhat spreading; the two *lateral similar to the posterior in shape, but a little larger,* and with the margins inclined to be involute about the middle; *the anterior one larger,* and one-third longer than the lateral, hairy inside below the middle, *labelliform* or panduriform; the upper portion, or true lamina, *obovate-spatulate,* slightly emarginate, involute in the bud, continuing to be involute from the middle to near the *base,* which is *abruptly dilated and gibbous-saccate,* the sac-like projection hemispherical externally. *Stamens* 5, hypogynous; the short *filaments very broad* and dilated, shorter than the anthers, *diadelphous,* namely, all but the posterior one united by their edges into an imperfect ring or cup; the *two lateral ones inappendiculate* and nearly smooth externally, the *two anterior* pubescent externally, and each *thickened on the back by an adnate, large and fleshy gland* or tubercle: filament of the *posterior stamen* resembling the lateral ones, but *rather narrower,* smooth, and not appendiculate on the back, *distinct,* or connected with the lateral ones at the very base only. The filaments are continued into a membranaceous, yellowish-brown, oblong-ovate and obtuse, entire, *petaloid appendage*, or production of the connective, which much exceeds the introrsely adnate anther. The two cells of the anther are narrowly oblong, longitudinally dehiscent, as in the order generally; but the *apex of the anther* is free, and *tipped with a* (simple or double) *mucro* (as in several *Alsodeiæ*), which in some cases is conspicuous, in others nearly obsolete. *Ovary globose*, canescently pubescent, one-celled, with 3 *parietal many-ovuled placentæ. Style* elongated, glabrous, somewhat *thickened upwards, slightly curved*, the apex more thickened and produced on one side: the stigma small and simple, terminating the lateral projection. Ovules indefinite, occupying several rows on each placenta, obovoid, anatropous. Fruit unknown.

On account of the great thickness of the walls of the fertilized ovaries (from which the sepals have fallen) I have little doubt that the fruit is a berry: but even if it prove to be capsular, the structure of the stamens, with the deciduous sepals, will sufficiently distinguish the plant from *Ionidium*, of which it has not the habit; and the very different corolla equally separates it from *Corynostylis*, Mart. & Zucc. (*Calyptrion*, Gingins).

As the ancients garlanded the graves of their deceased friends with violets, so I dedicate this new genus of *Violaceæ* to the memory of Alfred T. Agate, the Botanical Artist of the Expedition, who died at Washington shortly after its return. The engraving is copied from a drawing made by Mr. Agate, from the fresh plant, at the Feejee Islands. I trust the name *Agàtea* will be thought sufficiently distinct in pronunciation both from *Agathèa* and *Agati*.

The odd and saccate petal in this plant, and probably in the whole Violet Family, is truly anterior (vide Gray, Genera Floræ Am. Bor.-Or. Illustrata, 1, p. 183), and does not become so by resupination, as the order is characterized by Bartling, Endlicher, &c.

PLATE 7.—AGATEA VIOLARIS. Fig. 1. Diagram of a flower. 2. A flower, with its pedicel and bractlets. 3. Lower petal. 4. A lateral, and 5, an upper petal. 6. A flower, with the calyx and corolla removed. 7. The andrœcium spread open; seen from without. 8.

The same, seen from within. 9. The upper stamen. 10. One of the lower stamens. 11. The pistil. 12. Transverse, and 13, longitudinal section of the same. The details variously magnified.

7. ALSODEIA, *Petit-Thouars, R.Br.*

1. ALSODEIA PHYSIOPHORA, *Mart. & Zucc.*

Alsodea physiophora, Mart. & Zucc. Nov. Gen. & Spec. Bras. 1, p. 28, t. 19.

HAB. Near Rio Janeiro, Brazil. (In fruit only.)

8. ISODENDRION, Nov. Gen.

Calyx pentaphyllus, æqualis, persistens. Corollæ regularis petala 5 lineari-spathulata, æqualia, longe tubuloso-connivientia, apice dilatata patentia. Stamina 5, discreta: filamenta angusta, inappendiculata, apice haud producta, antheram basifixam nudam gerentia. Ovarium uniloculare, placentis 3 parietalibus biovulatis. Stylus elongatus, subclavatus, apice decurvus, simplex: stigma punctiforme laterale. Ovula collateralia, horizontalia. Capsula coriacea, sepalis petalisque persistentibus cincta, trisperma, trivalvis. Semina obovata.—Arbusculæ vel frutices Sandwicenses; foliis alternis confertis; stipulis triangulari-subulatis appressis diu persistentibus; floribus axillaribus solitariis breviter pedicellatis parvis.

A genus evidently allied to *Alsodeia*, *Paypayrola*, Aubl. (which, as illustrated by Tulasne, in Ann. Sci. Nat. 3d ser. 7, p. 368, appears to differ from *Alsodeia* principally in the inappendiculate stamens), and *Pentaloba*, Lour., which Mr. Brown long since stated to be congeneric with *Alsodeia*, if it should prove to have a capsular fruit.* From these the present genus is distinguished by its entirely *separate stamens, with narrow filaments and normal anthers, destitute of any prolongation of the connective*, and by the *unilateral stigma*, which, in a *flower otherwise perfectly regular*, vindicates its relationship with the genuine *Violeæ*. In allusion to the regular flowers and arborescent habit, I have compounded the name of the genus from ἴσος, *equal*, δένδρον, *tree*, and ἴον, *the Violet.*

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* Prof. Arnott (in Mag. Zool. & Bot. 2, p. 543), in uniting these two genera, has adopted the older name of *Pentaloba*; but the inappropriateness of this name even for Loureiro's own plant, in which Mr. Brown found only three placentæ, should forbid its superseding the long-admitted name of *Alsodeia*.

1. ISODENDRION PYRIFOLIUM, Sp. Nov. (Tab. 8.)

I. foliis membranaceis ovalibus seu ovato-ellipticis crenato-serrulatis petiolatis, junioribus subtus ramulisque pubescentibus; stipulis sepalisque dorso sericeis margine late scariosis; floribus pendulis.

HAB. Wooded portion of the Kaala Mountains, Oahu, Sandwich Islands.

A branching shrub, about 6 feet high; the branches rather slender, glabrous, except the younger, which are a little pubescent, beset with the persistent stipules, which remain long after the leaves have fallen. *Leaves* alternate, approximate at the summit of the branches, *membranaceous* in texture, *ovate-elliptical or oval*, obtuse or rounded at both ends, 1½ to 2 inches long, loosely pinnately veined, *crenate or minutely serrate*, with small and glandular-tipped teeth, glabrous, or the lower surface minutely pubescent when young, as are the petioles (3 to 5 lines long). *Stipules* geminate, triangular, acute or acuminate, oblique, squamaceous or *scarious*, carinate with a very strong and thick midrib which is minutely *silky-pubescent externally*, ciliolate on the margins, a line and a half long; the two partly overlying each other in the axil of the petiole, as if intrapetiolar, close-pressed to the axis, somewhat imbricated at the summit of the branchlets, more remote on the larger branches, persistent, or at length wearing away. Flowers solitary and axillary, developed with the leaves. *Pedicels recurved*, 2 or 3 lines long, scarcely as long as the flower, minutely pubescent, bibracteolate in the middle; the bracts opposite, resembling the stipules. Calyx of 5 equal and nearly distinct *sepals*, which are ovate and acute, not at all produced at the base, *of a texture and form nearly the same as the stipules*, somewhat carinate and minutely *silky-*

pubescent on the back, the margins more or less scarious, quincuncially imbricated in æstivation, persistent. Corolla hypogynous, or obscurely perigynous, regular, hypocraterimorphous; the five petals distinct, but connivent for the greater part of their length into a cylindrical tube, the dilated summit, or true lamina, abruptly spreading, slightly pubescent externally. They are all alike in size and shape, about 4 lines long, probably white, not appendiculate, linear-spatulate (that is, the connivent claws, if they may be so called, are linear, and the spreading lamina ovate), convolutely imbricate in æstivation, in the manner of *Violaceæ* generally (that is, with only one petal wholly external and one (the anterior) internal), at length separated by the growth of the fructified ovary, marcescent and persistent, with the calyx, around the base of the ripe capsule. Stamens 5, hypogynous, or obscurely perigynous, alternate with the petals, and much shorter than they, longer than the ovary, all similar, entirely distinct and separate, glabrous. Filaments subulate-linear, somewhat flattened, longer than the anthers, entirely distinct, destitute of any dorsal glands or other appendages, not dilated or prolonged at the apex, but bearing the anthers on their summit. Anthers oblong, fixed by the base, introrse; the cells approximate, joined by a narrow connective, longitudinally and somewhat introrsely dehiscent, muticous. Pollen-grains simple, spherical. Disk none. Ovary closely sessile, ovoid, glabrous, one-celled, with 3 parietal placentæ. Style elongated, included in the corolla, somewhat curved, filiform, a little club-shaped at the simple apex, which is somewhat gibbous and produced on the lower side, where it is tipped with a minute and simple stigma. Ovules 6, namely, a single pair on the middle of each nerviform placenta, collateral, horizontal, anatropous. Capsule ovoid, coriaceous, about three-seeded, loculicidally three-valved; the persistent style also splitting from the base to the apex into three portions; the valves conduplicate after dehiscence, as in *Viola*, &c. Seeds obovate, smooth; the testa coriaceous, marked with a slender rhaphe and a broad apical chalaza. Embryo not seen.

Plate 8.—Isodendrion pyrifolium. Fig. 1. A pair of stipules, persistent on a portion of the stem, enlarged. 2. One of these stipules, detached. 3. Diagram of the flower. 4. A flower with its bractlets, enlarged. 5. One of the petals, enlarged. 6. Stamens and pistil, magnified. 7. Posterior view of a stamen, magnified. 8. Anterior

view of the same. 9. Magnified pistil, with the ovary vertically divided, showing the ovules. 10. Apex of the style with the stigma, more magnified. 11. The dehiscent capsule, with the persistent floral envelopes, enlarged. 12. A seed, magnified.

2. Isodendrion longifolium, Sp. Nov. (Tab. 9.)

I. glabrum; foliis subcoriaceis obovato-lanceolatis seu cuneato-oblongis in petiolum angustatis subrepandis; sepalis ovatis stipulisque lævibus; floribus in ramos crassos brevissime pedicellatis.

Hab. Kaala Mountains, Oahu, Sandwich Islands.

Stems 6 feet high, with rather few very stout branches, roughened with the cicatrices of fallen leaves, and above with the persistent stipules. *Leaves* alternate, approximate at the summit of the branches, of a *coriaceous* texture, *entirely glabrous, as is the whole plant,* 6 to 8 inches long, 1½ to 2½ inches wide, *obovate-lanceolate*, varying from obovate-oblong to oblong-lanceolate, somewhat acute or acuminate, or rarely obtuse at the apex, below *tapering to an acute base*, veiny, and with the veinlets reticulated, the midrib very prominent underneath; the margins *obscurely repand-undulate*, or obsoletely and sparingly serrulate. Petioles ½ to 1½ inches long. *Stipules* geminate, subulate-triangular from a broad base, *glabrous*, carinate with a thickened axis, and with somewhat scarious margins, appressed, persistent long after the leaves have fallen. *Flowers* axillary, *solitary, on very short drooping pedicels*, which are bibracteolate next the base, and only one or 2 lines long. Calyx of 5 nearly distinct, ovate and glabrous sepals, quincuncially imbricated in æstivation, not at all produced at the base, scarcely a line long, persistent. Corolla hypogynous or obscurely perigynous, regular, apparently white, scarcely 3 lines long: petals 5, linear-spatulate, connivent for two-thirds of their length into a tube, the upper and dilated portion spreading, convolutely imbricated in æstivation, as in *Violeæ*, marcescently persistent. Stamens 5, hypogynous or obscurely perigynous, alternate with the petals and much shorter than they, scarcely exceeding the ovary, all similar, entirely unconnected, glabrous. Filaments subulate-linear, flattened, about the length of the anthers which terminate them, destitute of any dorsal or terminal appendages. Anthers oblong, inappendiculate, exactly like those of the foregoing species. Disk none. Ovary, ovules, style, stigma, &c., nearly as in the foregoing species. Mature fruit not seen.—The leaf-bearing and flowering branches are about a quarter of an inch in diameter: the flowers are small and inconspicuous.

PLATE 9.—ISODENDRION LONGIFOLIUM. Fig. 1. Stipules, front and back view, enlarged. 2. Diagram of the flower. 3. A flower, enlarged. 4. A petal, more enlarged. 5. Stamens and pistil, magnified. 6. The same after the removal of the stamens. 7. Vertical section of the ovary, magnified.

3. ISODENDRION LAURIFOLIUM, Sp. Nov.

I. glabrum; foliis coriaceis oblongo-lanceolatis subrepandis basi obtusis brevissime petiolatis; sepalis lanceolatis.

HAB. Sandwich Islands, with the preceding species.

Branches rather stout, entirely *glabrous*, as is the whole plant. *Leaves coriaceous, oblong-lanceolate*, somewhat narrowed at both ends, *obtuse at the base*, about 3 inches long and an inch wide, sparingly and *obscurely repand-serrulate*, or entire, *very short petioled*, shining above, pale beneath, not unlike those of *Laurus nobilis*. Petioles only one or 2 lines long, seldom longer than the stipules. Pedicels a line long, bibracteolate. Flowers apparently similar to those of the preceding species; except that the *sepals* are *lanceolate* and much narrower. Fruit not seen.

Only a single and incomplete specimen of this plant was gathered. Perhaps it will be found to vary into *I. longifolium;* but the branches are much less stout, the leaves are less than half the size, are all obtuse or rounded at the base, and very short-petioled, and the sepals are of a different shape. As to the rest of the flower, no especial difference is manifest. The stipules are similar, but apparently less persistent.

9. MELICYTUS, *Forst.*

MELICYTUS, Forst. Char. Gen. Fl. Ins. Austr. t. 62; Hook. f. Fl. N. Zeal. p. 17.

1. MELICYTUS RAMIFLORUS, *Forst.*

Melicytus ramiflorus, Forst. l. c., & Prodr. Fl. Ins. Austr. p. 70; Lam. Ill. t. 812; DC. Prodr. 1, p. 257; A. Rich, Fl. N. Zel. p. 313; A. Cunn. in Ann. & Mag. Nat. Hist. 4, p. 256; Hook. f. Fl. N. Zeal. p. 18.

HAB. Bay of Islands, New Zealand.

Dr. Hooker has with manifest correctness referred this genus to the order *Violaceæ*, and has increased the number of the species to five. The dorsal appendage of the anther is inconspicuous in the present species: it is thickened and concave at the apex.

2. MELICYTUS MACROPHYLLUS, *A. Cunn.*

Melicytus macrophyllus, A. Cunn. in Ann. & Mag. Nat. Hist. l. c.; Hook. f.

HAB. Bay of Islands, New Zealand. (In fruit.)

The leaves of this species, as Dr. Hooker remarks, are larger than those of the preceding, of a deeper green, and with fewer and coarser teeth: the somewhat obovoid berries are more than twice as large.

10. SAUVAGESIA, *Jacq.*

1. SAUVAGESIA ERECTA, *Linn.*

HAB. Organ Mountains, near Rio Janeiro, Brazil. Common almost throughout tropical America.

Ord. DROSERACEÆ.

1. DROSERA, *Linn.*

* *Antarcticæ & Novo-Zelandicæ.*

1. Drosera uniflora, *Willd.*

D. uniflora, Willd. Enum. p. 340; DC. Prodr. 1, p. 317; Gaud. Bot. Freyc. Voy. p. 137; Hook. f. Fl. Antarc. p. 245.

Hab. Orange Harbour, Fuegia; growing with *Psychrophila dioneæfolia*, *Drapetes*, &c.

The character given by Dr. Hooker well distinguishes this from the other one-flowered species (all belonging to high southern latitudes), except that for "*perpusilla*," the term *nana* should be substituted, as the plant is rather stout. The rounded blade of the leaves and the short peduncles distinguish it from *D. Arcturi*. The expanded flower measures about five lines across.

2. Drosera Cunninghamii, *Walp.*

D. Cunninghamii, Walp. Repert. 1, p. 229.
D. intermedia, A. Cunn. Fl. Nov. Zeal. in Ann. & Mag. Nat. Hist. 4, p. 110, non Hayne.

Hab. Bay of Islands, New Zealand.

Root fascicled, fleshy. Caudex none or scarcely any. Petioles, scapes, &c., perfectly smooth and glabrous, both compressed: the former 5 or 6 inches, the latter a foot or more in length. Leaves simply two-parted; the divisions narrowly linear, scarcely broader than the petiole, 2 or 3 inches long, glanduliferous above, the lower surface naked. Flowers 12 to 20, smaller than those of *D. binata*, and on more slender pedicels, but, in our specimens, mostly disposed in a forked and equally subcymose inflorescence. Seeds scobiform, linear; the testa produced at each end to thrice the length of the globular nucleus.

* * *Novo-Hollandicæ.*

3. Drosera pedata, *Pers.*

Drosera pedata, Pers. Ench. 1, p. 337; DC. Prodr. 1, p. 319.
D. dichotoma, Smith, in Rees. Cycl. no. 6.

Hab. Sydney, New South Wales.

Root of thickened fasciculated fibres. Caudex none or scarcely any. Petioles and scapes compressed, especially the latter, which are strongly ancipital, from 10 to 15 inches long. The numerous flowers are larger than in the preceding species, but smaller than in *D. binata;* the cyme trichotomous. Seeds scobiform, minute. Leaves two-parted, with the divisions dichotomous, or often with one division simple and the other dichotomous, or some of the earlier ones with the primary divisions perfectly simple, as in *D. binata;* from which the ancipital scape should distinguish it. I have a specimen of the simple-leaved form, gathered at Sydney, I believe, by Dr. Hooker.

4. Drosera peltata, *Smith.*

Drosera peltata, Smith, Exot. Bot. t. 41, & in Rees, Cycl.; DC. Prodr. 1, p. 319, vix Labill.

Hab. Sydney, New South Wales.

The sepals are beset externally, and especially on the margins, with glandular bristles, as *D. peltata* is, I believe, described by Smith.

But Labillardiere's *D. peltata*, according to his figure and description, and some specimens from his collection, given to me by Mr. Webb, has the calyx glabrous and naked, or the margins barely 2–3-toothed towards the apex. I have the same plant from Sydney, &c., named "*D. petiolaris*, Sieber," by Planchon; but *D. petiolaris*, R. Br., is a very different species. The true *D. peltata* also comes from Van Diemen's Land.

5. Drosera spathulata, *Labill.*

Drosera spathulata, Labill. Pl. Nov. Holl. 1, p. 79, t. 106, f. 1; DC. Prodr. 1, p. 318.

Hab. Sydney, New South Wales.

6. Drosera pygmæa, *DC.*

Drosera pygmæa, DC. Prodr. 1, p. 317; Hook. f. in Jour. Bot. 2, p. 407; Lehm. Pl. Preiss. 1, p. 250.
D. pusilla, R. Br. ined. ex. DC., non H. B. K.
D. micrantha, Lehm. Pugill. Pl. 8, p. 39, ex Lehm. l. c.

Hab. Near Sydney, New South Wales.

The most minute of all the species; the lamina of the peltate radical leaves less than a line in diameter; the capillary scapes half an inch, or sometimes an inch long, the flower minute, in our specimens always solitary. Lehmann describes the plant of Preiss as 2–6-flowered. The conspicuous stipules, as Dr. Hooker remarks, present the appearance of a silvery star, surrounding the base of the scape.

* * * *Sandwicenses.*

7. Drosera longifolia, *Linn.*

Drosera longifolia, Linn. Fl. Suec. no. 274, & Spec. 1, p. 282, pro parte; Fries. Novit. Fl. Suec. ed. 2, p. 82.
D. Anglica, Huds. Fl. Angl. p. 135; DC. Prodr. 1, p. 318; Hook. Brit. Fl., & Fl. Bor. Am. 1, p. 81.

Hab. Mountains of Kauai, Sandwich Islands; "from a marsh, on the table land."

It is interesting to receive a *Drosera* from the Sandwich Islands, and especially one of the boreal species. The specimens, in their foliage, seeds, &c., are undistinguishable from *Drosera longifolia* (applying that name, as I think we should, to the *D. Anglica* of Hudson), a species which, with *D. rotundifolia*, is found quite around the northern hemisphere from Oregon to Kamtschatka.

Ord. TREMANDRACEÆ.

1. TETRATHECA, *Smith.*

Tetratheca, Smith, Specim. Bot. N. Holl. 1, t. 2; Labill. Pl. N. Holl. 1, p. 95, t. 122, 123; R. Br. in Flinders, Voy. 2, p. 544; DC. Prodr. 1, p. 343; Endl. Pl. Hugel. p. 7, & Gen. Pl. 5644; Steetz, in Pl. Preiss. 1, p. 211; Payer, in Ann. Sci. Nat. ser. 3, 15, p. 351.

1. Tetratheca juncea, *Smith, l. c.*

Hab. Vicinity of Newcastle, New South Wales.

Steetz (l. c.) remarks that, having carefully examined many species of *Tetratheca*, he has never found more than one ovule in each cell of the ovary, and Payer (l. supr. cit.), chiefly upon this authority, denies the existence of a greater number, notwithstanding the phrase "Ovarium 2-loculare, loculis 1–3-ovulatis," in Mr. Brown's ordinal character. To show, if need be, that this character is not "founded upon an error," I may state that I find *two* (superposed) ovules in each cell of the ovary of *Tetratheca juncea*, and *T. thymifolia*, and *three* (the two upper collateral) in *T. affinis*. M. Payer is not more fortunate in his statement, that Mr. Brown characterized *Tetratheca* by its tetramerous flowers and biovulate cells of the ovary, and *Tremandra* by its pentamerous flowers and solitary ovules; whereas Mr. Brown has refrained from mentioning a single distinctive character of the two genera. It was DeCandolle who inferred that *Tetratheca* was always tetramerous, and Endlicher, who assumed in his Genera Plantarum, that the cells of the ovary were always biovulate, he having previously found them so in his *T. affinis* and *T. setigera*, Pl. Hugel, l. c. The latter species I have not seen. In the former, the single ovary which my specimen (from Drummond's Swan River collection) furnishes, plainly exhibited three ovules in each cell. Both are said by Steetz to have solitary ovules.

2. Tetratheca ericifolia, *Smith.*

T. ericifolia, Smith, Exot. Bot. p. 37, t. 20; Rudge, in Linn. Trans. 8, t. 11; DC. l. c.

Hab. Near Sydney and Newcastle, New South Wales.

Some of the specimens have the calyx and peduncles nearly glabrous, as the species is characterized. But in most of them they are beset with scattered glandular-tipped bristles, as they are in other specimens from different collectors; and their stems and leaves are more scabrous. Dr. Steetz has remarked that several species vary in this manner. The cells of the ovary are uniovulate.

3. Tetratheca thymifolia, *Smith.*

T. thymifolia, Smith, Exot. Bot. t. 22; DC. Prodr. 1, p. 343.

Hab. Vicinity of Newcastle, New South Wales.

There are two ovules in each cell of the ovary, one inserted above the other, the lower one occupying nearly the middle of the cell. The sepals in our specimens are scarcely or not at all ciliate.

ORD. POLYGALACEÆ.

1. POLYGALA, *Linn.*

* *Austro-Americanæ.*

1. POLYGALA STENOPHYLLA, Sp. Nov.

P. glabra; caulibus gracilibus ramisque erectis junceis; foliis filiformibus mox deciduis; racemis elongatis spicatis laxifloris; carina cassidiformi alas calycinas subæquante ample cristata seu in floribus serotinis ecristata!

HAB. Rio Negro, Northern Patagonia; on sand-hills.

Root apparently perennial. *Stems slender*, one to 2 feet high, herbaceous but rigid, terete, green and *rush-like*, paniculately branched, the *branches also erect*, filiform, *glabrous, as is the whole plant. Leaves* alternate, all *filiform* or setiform, an inch or more in length, sparse, the cauline ones *deciduous. Racemes or spikes* terminating the branches one or two inches in length, either rather densely or quite *loosely flowered.* Bracts minute, ovate, scarious, caducous, about the length of the very short pedicels, that is, less than a line long. Exterior sepals ovate, obtuse, scarious or petaloid, nearly white. Wings broadly obovate, very obtuse, nearly 2 lines long, white in the dried specimens, as long as the carina. Corolla tinged with blue or purple: the lateral petals narrowly oblong, equalling the carina, below adnate to the claw for its whole length: the *carina* itself short and somewhat *helmet-shaped*, entire, surmounted with an ample *multifid-fimbriate crest*, which, however, *in the later flowers is reduced to a few fimbriæ, and in some of them wholly disappears!* Stamens 8. Style strongly geniculate, thickened above, somewhat two-lobed at the apex; the upper (anterior) lobe acute, the other bearing a globular stigma. Capsule 2 lines long, oval, not emarginate, glabrous. Seed oblong, villous. Lobes of the caruncle linear-filiform, as long as the seed.

This is a well-marked, and apparently undescribed species; unless it should prove to be the *P. capillifolia*, of unknown origin, imperfectly characterized by DeCandolle, from Desfontaines' herbarium. But that species is said to have a two-cleft capsule and an annual root. The flowers of the present species are twice as large as those of *P. linoides*, and the stems are rush-like.

2. Polygala Cyparissias, *St. Hil.*

Polygala Cyparissias, St. Hil. Fl. Bras. Mer. 2, p. 15; Walp. Repert. 1, p. 239.

Hab. Near Rio Janeiro, Brazil; on the beach.

3. Polygala paniculata, *Linn.*

Hab. Near Rio Janeiro, and in the Organ Mountains, Brazil.

4. Polygala lancifolia, *St. Hil.? l. c.*

Hab. Organ Mountains, near Rio Janeiro, Brazil.

A single fragment is in the collection, which I can only doubtfully refer to the above-named species of St. Hilaire.

5. Polygala cestrifolia, *St. Hil.? l. c.*

Hab. Organ Mountains, near Rio Janeiro, Brazil.

These specimens likewise are too imperfect for certain determination, but they best accord with the character of *P. cestrifolia* of St. Hilaire.

* * *Africanæ.*

6. Polygala Garcini, *DC.*

P. Garcini, DC. Prodr. 1, p. 323; Eckl. & Zeyh. Enum. Pl. Afr. Austr. p. 21.
P. frutescens, etc. Burm. Pl. Rar. Afric. Dec. p. 203, t. 73, f. 3.

Hab. Cape of Good Hope, near Cape Town.

7. Polygala erioptera, *DC.*

Polygala erioptera, DC. Prodr. 1, p. 326; Deless. Ic. Sel. 3, t. 15; Webb, Spic. Gorg. p. 103.

Hab. St. Jago, Cape de Verde Islands.

2. SALOMONIA, *Lour.*

1. Salomonia Cantoniensis, *Lour.*

Hab. Singapore. Probably introduced from China.

3. COMESPERMA, *Labill.*

1. Comesperma conferta, *Labill.*

Comesperma conferta, Labill. Pl. Nov. Holl. 2, p. 23, t. 161; DC. Prodr. 1, p. 334.

Hab. Near Sydney, New South Wales.

2. Comesperma virgata, *Labill.*

Comesperma virgata, Labill. Pl. Nov. Holl. 1, p. 21, t. 159; DC. Prodr. 1, p. 334.

Hab. Near Sydney and Cook's River, New South Wales.

3. Comesperma ericina, *DC. l. c.*

Hab. Near Sydney, &c., New South Wales.

This has more strict stems and smaller (often more spreading) leaves than the foregoing; of which I suspect it is merely a variety. The lower petal is about as much emarginate as in Labillardiere's figure of his *C. virgata*. The species require a careful revision.

4. Comesperma nudiuscula, *DC. l. c.*

Hab. Hunter's River and Woologong, New South Wales.

A slender species, with the leaves reduced to setaceous bracts, and those mostly deciduous.

4. MURALTIA, *Necker.*

1. Muraltia Heisteria, *DC.*

Muraltia Heisteria, DC. Prodr. 1, p. 334; Eckl. & Zeyh. Enum. Pl. S. Afr. p. 24.
Heistera pungens, Berg. Descr. Pl. Cap. p. 185.
Polygala Heisteria, Linn. Spec. Pl. ed. 2, p. 989; Curt. Bot. Mag. t. 340.

Hab. Cape of Good Hope, near Cape Town.

2. Muraltia mixta, *Linn. f.*

Hab. Cape of Good Hope; with the preceding.

3. Muraltia diffusa, *Burch.*

Muraltia diffusa, Burchell, in DC. Prodr. l. c.; Eckl. & Zeyh. Enum. Pl. S. Afr. l. c.

Hab. Cape of Good Hope.

5. MONNINA, *Ruiz & Pav.*

1. Monnina macrostachya, *Ruiz & Pav.*

Var. *pumila; racemis breviusculis; foliis caulinis inferioribus et radicalibus obovatis; fructu puberulo.*

Hab. Peru: common below Obrajillo.

The same form was gathered near Lima and at Purruchuca by Matthews. It appears to differ from *M. herbacea*, DC. only in having a manifest wing to the fruit. Our specimens are *small*, 3 to 7 inches high, from an annual root; the radical and some of the lower cauline *leaves broadly obovate;* and the *racemes are only an inch or two in length.* The wing of the *fruit* is glabrous or nearly so, but its disk is *tomentose-puberulent.*

2. Monnina angustifolia, *DC.*

Monnina angustifolia, DC. Prodr. 5, p. 340; Presl, Rel. Hænk. 2, p. 103.

Hab. Peru; on a mountain ridge, between Lima and Yanga.

Plant 2 or 3 feet high, with diffusely spreading and slender branches. Fruit 2 or 3 lines in diameter, including the broad and membranous wing, either glabrous or minutely tomentose, deeply emarginate at both ends.—Perhaps not distinct from *M. pterocarpa.*

3. Monnina linearifolia, *Ruiz & Pav.*

Monnina linearifolia, Ruiz & Pav. Fl. Peruv. Syst. 1, p. 173; DC. l. c.; Hook. & Arn. Bot. Beech. p. 10, t. 6; Gay, Fl. Chil. 1, p. 240.

Hab. Chili, near Valparaiso.

6. SECURIDACA, *Linn.*

1. Securidaca ovalifolia, *St. Hil.*

Securidaca ovalifolia, St. Hil. Fl. Bras. Mer. 2, p. 68; Walp. Repert. 1, p. 246.

Hab. Near Rio Janeiro, Brazil. (In fruit.)

Ord.? TRIGONIACEÆ.

1. TRIGONIA, *Aubl.*

Trigonia, Aubl. Pl. Guian. 1, p. 390, t. 149, 150; Lam. Ill. t. 347; H. B. K. Nov. Gen. & Spec. 5, p. 141; St. Hil. & Moquin, in Mem. Mus. 18, t. 31; Endl. Gen. 5659.

1. Trigonia nivea, *Camb.*

Trigonia nivea, Cambess. in St. Hil. Fl. Bras. 2, p. 113; Walp. Repert. 1, p. 248.

Hab. Organ Mountains, in the vicinity of Rio Janeiro, Brazil. (In flower only.)

2. Trigonia crotonoides, *Camb.*

Trigonia crotonoides, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 115, f. 105.
Croton eriospermum, Lam. Dict. 2, p. 211.

Hab. Organ Mountains and Rio Janeiro, Brazil, the var. β. incana, Camb., and var. γ. oblongifolia, Camb., l. c.: also a form with the oblong leaves entirely glabrous.

ORD. CARYOPHYLLACEÆ.

SUBORD. I. SILENEÆ.

1. DIANTHUS, *Linn.*

1. DIANTHUS PROLIFER, *Linn.*

HAB. Madeira. Also near Sydney, New South Wales; undoubtedly introduced from Europe.

2. SILENE, *Linn.*

1. SILENE STRUTHIOLOIDES, Sp. Nov. (Tab. 10.)

S. fruticosa, ramosissima; foliis subulatis marginibus involutis rigidis bifariis, ramulorum sterilium conferto-imbricatis demum recurvo-patentibus; cyma racemoso-paniculata; calycibus tubulosis clavatis; petalis cuneatis obcordato-bilobis breviter biappendiculatis; stipite ovario duplo longiore.

Var. *α. foliis rigidioribus cum ramis et inflorescentia glaberrimis.*

Var. *β. foliis tenuioribus sæpius longioribus, juventis præsertim ad margines ramulisque pl. m. viscoso-pubescentibus.*

HAB. On Mouna Loa, and Mouna Kea, Hawaii, in the region of *Edwardsia* (8,000 feet and higher); near the crater of Lua Pele; also in the district of Waimea, in the same island. The two forms apparently grow in the same stations.

Stems about a foot high, *woody*, branching, often *much branched*, erect or spreading, in some specimens half an inch in diameter at the base; the bark smooth and thin, brownish. *Leaves crowded, even imbricated on the sterile branches*, but not exceeding the internodes on the upper part of the flowering shoots, *two-ranked* (but only the alternate pairs exactly superposed), subulate, pungently acute, canaliculate and *with incurved margins*, nerveless, or obscurely one-nerved, *rigid*, persistent, their connate bases somewhat appressed, especially on the sterile branches, above *at length spreading or recurved*, half an inch or less in length, and more rigid in the first variety, in which they are perfectly glabrous, as is the whole plant; in the var. β. they are less rigid, more spreading, and, at least when young, a little pubescent with fine viscous hairs (as are the branches and inflorescence), their margins especially pubescent-ciliate; the larger cauline ones from an inch to an inch and a quarter long; those of the inflorescence reduced to subulate bracts. Flowers rather few (5 to 12), *racemiform-paniculate*, at first spreading or drooping, erect in fruit: peduncles about 3 lines long, bibracteolate in the middle and one-flowered, or sometimes two-flowered. *Calyx* half an inch long, *tubular*, soon becoming strongly *clavate*, glabrous, greenish, often tinged with purple, five-toothed; the teeth ovate, about a line in length. *Petals* with a small *cuneate* and *two-lobed* or *deeply obcordate* lamina, exserted about 3 lines beyond the calyx, apparently greenish-white and turning purplish; the dilated claw crowned at its summit *with a small and fleshy two-parted appendage*. Stamens 10, included: the five filaments opposed to the petals adnate to the base of their claws. *Stipe* 3 lines long, about *twice the length of the cylindraceous ovary*, which is three-celled at the base. Styles 3. Capsule partly exserted, ovoid, six-valved at the apex, many-seeded. Seeds minutely reticulate-roughened. Embryo curved about half way round.

I know of no species with which this remarkable, shrubby *Silene* may be compared. It belongs to the section *Siphonomorpha;* but it is altogether peculiar in its aspect. The foliage somewhat resembles that of some of the numerous *Raillardiæ* of the same district, or of a *Struthiola.*

Plate 10, *A*.—Silene struthioloides, of the natural size. Fig. 1. Vertical section of a flower. 2. A petal, with the stamen adnate to its base. 3. Pistil, with its stipe. 4. Capsule, with the persistent calyx, petals, &c. 5. A seed. 6. The same, vertically divided, showing the embryo, &c.—All magnified.

2. Silene lanceolata, Sp. Nov. (Tab. 10.)

S. frutescens, ramosa, glabra; caulibus gracilibus erectis; foliis lanceolatis acutis uninerviis basi angustata ciliatis; cyma nuda corymbiformi; calycibus oblongo-campanulatis, fructiferis ovoideis; petalis cuneatis integris obsolete coronatis calyce dimidio longioribus; stipite brevi.

Hab. On the mountains of Kauai, one of the Sandwich Islands. Also on Maui (specimen without flowers or fruit).

Stems one or 2 feet high, *branching, woody,* but *slender;* the branches naked below, and annulate with the approximate scars of the fallen leaves, very leafy above, *glabrous. Leaves* narrowly *lanceolate, acute,* or acuminate, *one-nerved,* sessile, *narrowed towards the base, where they are ciliate,* otherwise entirely glabrous, rather coriaceous in texture, flat, spreading, 1½ to 2½ inches long, about 3 lines wide; the floral ones reduced to small subulate and ciliate bracts. Flowers numerous, rather crowded, in a *naked and pedunculate corymbiform cyme.* Pedicels 2 or 3 lines long. *Calyx* 4 lines long, glabrous, *oblong or tubular-campanulate,* in fruit *becoming ovoid* or obovate, five-toothed. *Petals* "white," *nearly twice the length of the calyx,* the *cuneate* or obovate lamina *entire* or nearly so; the *crown scale-like and minute, or almost obsolete.* Stamens 10: the five filaments opposed to the petals adnate only by their very base to the claws. Styles 3. Ovary oblong, three-celled at the base. *Stipe very short.* Capsule ovoid, not exserted from the calyx, six-valved at the summit. Seeds pretty strongly muricate. Embryo curved more than half way round the albumen.—The foliage, although narrower and only one-nerved, and the inflorescence, are somewhat like *Saponaria officinalis.*

Plate 10, *B*.—Silene lanceolata; of the natural size. Fig. 1.

Capsule, with the persistent calyx and the withered petals. 2. A seed. 3. Vertical section of the same, showing the embryo and albumen.—All magnified.

3. Silene inflata, *Smith.*

Hab. On rocks, east of Funchal; island of Madeira.

4. Silene quinquevulnera, *Linn.*

Hab. Valparaiso. Bay of Islands, New Zealand. Sydney, New South Wales.—A South European species (including *S. Gallica*, *S. Anglica*, and *S. cerastoides*, Linn.), now widely distributed and naturalized on the coasts, in many of the subtropical and warmer temperate parts of the world. It has not been previously noticed in New Zealand, where it is doubtless of very recent and probably local introduction.

5. Silene Antirrhina, *Linn.*

Hab. Rio Negro, Northern Patagonia; on sand-hills.

The specimen is entirely in fruit, and not in a condition for critical comparison with the plant of the United States; but, except that the pods are rather large, it appears to belong to this species; which, moreover, St. Hilaire gathered at Maldonado (Fl. Bras. Mer. 2, p. 164).

3. GYPSOPHILA, *Linn.*

1. Gypsophila australis.

G. annua; caulibus paniculato-ramosis erectis fere e basi usque ad apicem floriferis minutissime puberulis; foliis linearibus angustissimis obtusiusculis, ramealibus setaceis; pedicellis filiformibus patentibus *cum calyce turbinato glanduloso-pubescentibus; petalis linearibus apice emarginato-bilobis valvulisque capsulæ calycem paullo excedentibus; seminibus reticulato-rugulosis.*

Dichoglottis australis, Schlecht. in Linnæa, 20, p. 631.

HAB. In the vicinity of Puen Buen, New South Wales.

Stems 6 to 12 inches high, from an *annual* root, branching in a *paniculate* manner, *erect, very minutely puberulent*, a little glandular towards the summit, *flowering from near the base to the apex:* the pedicels nearly all becoming lateral. *Leaves* smooth, rather obtuse; the lower cauline ones narrowly *linear*, 6 to 8 lines long; the upper smaller and becoming filiform or *setaceous*. *Pedicels filiform*, solitary, 6 to 10 lines long, spreading in fruit, *pubescent with glandular-tipped spreading hairs*, which are rather deciduous. *Calyx turbinate*, a little larger than in *G. muralis*, five-lobed at the summit (the lobes or teeth ovate and very obtuse), *glandular-pubescent*. *Petals* perhaps a quarter longer than the calyx, narrowly cuneate-linear (but the flowers are all late ones: probably they were broader and more conspicuous in the earlier blossoms), *notched at the apex*. Stamens 10. Styles 2, short. Capsule obovoid, obtuse, four-valved; the *valves slightly exceeding the calyx*. *Seeds* numerous, *reticulated-rugose* with oblong areolæ much as in Jaubert and Spach's figure of *G.* (*Dichoglottis*) *tubulosa*, except that towards the micropyle the areolations are rather longitudinal than transverse.

Doubtless this is the species described by Schlechtendal, and it is the only known species of the genus from that part of the world. But his plant was found in the southeastern part of Australia, and in some minor points it does not altogether accord with ours, as described above. It is a coarser plant than *G. muralis*, with more strict and prolonged stems, and lateral flowers.

4. MELANDRIUM, *Rœhl.*

MELANDRIUM, Rœhling, Deutschl. Fl. ed. 1, p. 254; Fenzl, in Ledeb. Fl. Ross. 1, p. 326; Endl. Gen. Suppl. 2, p. 78.

Lychnis, subgen. Melandrium, Braun, in Flora, 1839, 1, p. 319; Koch. Fl. Germ. & Helv. ed. 2, 1, p. 116.

1. Melandrium thysanodes.

M. caule adscendente uni–paucifloro; foliis lanceolatis radicalibusve spathulatis marginibus ciliato-tomentosis, superioribus calyce pedunculisque glanduloso-pubescentibus; calyce latissime campanulato ad medium quinquefido petalis fere nudis brevioribus; unguibus filamentisque basi tomentosis in annulum carnosum cupulatum ab gynophoro brevi discretum coalitis; seminibus lævibus margine lato inflato alatis.

Silene thysanodes, Fenzl, in Endl. Stirp. Nov. Dec. 4, p. 31.
Lychnis thysanodes, Hook. f. Fl. Antarc. p. 246.

Hab. Above Baños and Alpamarca, in the high Andes of Peru.

Plant cæspitose, from a perennial root. Stems in our specimens all simple and one-flowered, 3 to 6 inches high, *ascending*, glandular-pubescent, especially near the summit. *Leaves* rather fleshy, *lanceolate*, or the *radical ones often spatulate*, not unlike those of *M. apetalum*, except that they are shorter, more or less pubescent, or the upper ones (like the peduncle and calyx) glandular-pubescent, all *tomentose-ciliate*, especially when young. *Calyx* 4 lines long, *broadly campanulate*, or in fruit broadly turbinate or hemispherical, scarcely at all striate or nerved, *five-cleft to near the middle;* the lobes ovate, obtuse, strongly tomentose-ciliate. *Petals about one-third longer than the calyx;* the limb short, obovate or cuneate, purplish; the crown reduced to two minute appendages, or obsolete. Stamens 10; the five *filaments* opposed to the petals adnate with the base of their claws, all *woolly-pubescent at the very base*, and inserted into the edge of a cup-shaped or cylindraceous fleshy disk, which encircles the short stipe of the ovary, but is free from it. Styles 5. Ovary cylindraceous, one-celled. Capsule about the length of the calyx, five-valved; the valves two-cleft. Seeds numerous, quadrate-reniform, with a *smooth testa*, which is *extended beyond the nucleus into a wide and thickish* (probably *inflated*) *wing*. Embryo coiled into almost a complete ring.

This is without much doubt the species of the Colombian Andes, described by Fenzl from specimens gathered by Mr. Hall, and by Dr. Hooker from those gathered by Jameson. Our specimens accord with the character given by the latter, except that they are all one-flowered: but Fenzl, who referred his plant to *Silene*, describes it as trigynous, and with the ovary three-celled, at least towards the base; whereas ours has five styles, and the ovary is one-celled throughout. The pod and seeds have not been previously described; nor were the hairy bases of the filaments and of the claws of the petals noticed. A trace of this pubescence may be observed in *M. Magellanicum* (or at least in *Lychnis Chilensis*, Gay, Fl. Chil., which appears to be no more than a variety of that species); but it is wholly wanting in the Arctic *M. apetalum*.

SUBORD. II. ALSINEÆ.

5. ARENARIA, *Linn.* (excel. sp.), *Fenzl.*

1. ARENARIA DIFFUSA, *Ell.*

Arenaria diffusa, Ell. Sk. Bot. Car. & Georg. 1, p. 519 (1821); Gray, Pl. Wright, 2, p. 18.
A. nemorosa, H. B. K. Nov. Gen. & Spec. 6, p. 35 (1822); DC. Prodr. 1, p. 408.
Spergulastrum lanuginosum, Michx. Fl. Bor.-Am. 1, 275; DC. Prodr. 1, p. 421.
Micropetalon lanuginosum, Pers. Ench. Pl. 1, p. 509.
Stellaria elongata, Nutt. Gen. Pl. N. Amer. 1, p. 289; DC. Prodr. 1, p. 399.
S. lanuginosa, Torr. & Gray, Fl. N. Amer. 1, p. 187.

HAB. Baños, Obrajillo, and Culnai; Andes of Peru.

This plant, likewise gathered by Matthews in Peru, is common in the Andes of Colombia, and extends to Jamaica, Mexico, and thence into the Southern United States. For a critical comparison brings to view no characters to distinguish the Peruvian and Quitensian plant from the *Arenaria diffusa* of Elliott; which name I retain, being older than that of Kunth, and more appropriate than that of Michaux, under *Spergulastrum*. It is a true *Arenaria*, as the genus is limited by Fenzl; the petals, when present, being entire. In specimens from

Florida and New Mexico, the petals are sometimes as long as the calyx. Kunth describes them as shorter than the calyx. In our Peruvian specimens they are fully as long as the sepals. The pubescence is variable, sometimes almost wanting. The seeds are lenticular, black, very smooth and shining.

2. Arenaria scopulorum, *H. B. K.*

Arenaria scopulorum, H. B. K. Nov. Gen. & Spec. 6, p. 31; DC. Prodr. 1, p. 411.

Hab. Above Casa Cancha, in the high Andes of Peru, a little below the snow-line.

3. Arenaria serpens, *H. B. K.*

Arenaria serpens, H. B. K. Nov. Gen. & Spec. 6, p. 32; DC. Prodr. 1, p. 412.

Hab. Baños, Andes of Peru. (Also near Cerro Pasco, Matthews. Andes of Quito, Jameson.)

4. Arenaria andicola, *Gill.*

Arenaria andicola, Gillies, in Hook. & Arn. Bot. Misc. 3, p. 148.
A. serpylloides, Gay, Fl. Chil. 1, p. 271?

Hab. High Andes of Chili, above Santiago, near the snow-line.

"Very closely allied to *A. serpens*, H. B. K.," as Hooker and Arnott remark; and I suspect no more than a variety of that species.

5. Arenaria Alpamarcæ, Sp. Nov.

A. cæspitosa, nana, glabra; foliis confertis imbricatisve ovato-lanceolatis carinatis cuspidatis rigidis basi parum ciliolatis connatis; pedunculo terminali unifloro foliis floreque paullo longiore; sepalis foliis similibus capsulam oligospermam sex-valvem subsuperantibus; petalis nullis; staminibus 5.

Hab. Andes of Peru, at Alpamarca, a little below the snow-line; also above Obrajillo and Baños. (High Andes of Peru, Matthews, in herb. Hook.)

Plant *dwarf, cæspitose*, in pulvinate, perennial tufts, of one or two inches in height, entirely glabrous. *Leaves much crowded*, and more or less *imbricated*, but somewhat spreading, *ovate-lanceolate* or oblong-lanceolate, about 2 or 3 lines long, broadest at the *connate* base, coriaceous and rather *rigid, tipped with a sharp cusp* or mucronation, *strongly carinate* with a thickened midnerve, and more or less two-grooved on each side of it, the margins thickened, smooth, or *very obscurely ciliate near the base*, persistent. *Peduncle terminal*, or by innovation lateral, not bracteolate, one or 2 lines, or in fruit 3 to 5 lines long, *one-flowered*. *Sepals* coriaceous, ovate-lanceolate, *nearly like the leaves*, 1½ to 2 lines long, usually 5, in some flowers 4. *Petals none*, or not detected. Stamens 5, or 4 in the tetramerous flowers, opposite the sepals and shorter than they are. *Capsule rather shorter than the calyx, six-valved* (or rarely four-valved) to near the base. Ovules about 20. Seeds 5 or 6, globular, smooth.

This species is probably to be referred to Fenzl's section *Dicranilla*, although the ovules are rather numerous, and the leaves are not closely imbricated, as in the following. The specimens are mostly in fruit: but, although the stamens remain, I find no trace of petals.

6. Arenaria dicranoides, *H. B. K.*

Arenaria dicranoides, H. B. K. Nov. Gen. & Spec. 6, p. 34; DC. Prodr. 1, p. 413.
A. bryoides, Walp. Rel. Meyen. p. 302; an Willd.?
Lobelia bryoides, Willd. Herb., ex Schlecht. in Rœm. & Schult. Syst. Veg. 5, p. 41.

Hab. Above Casa Cancha, Culnai, and Alpamarca, in the high Andes of Peru, near the snow-line.

The plant has much the aspect of *Dicranum glaucum*, as is mentioned by Kunth, and grows in similar cushion-like tufts. The leaves vary considerably in shape and size, even on different parts of the same plant: those of the older stems are mostly triangular-lanceolate and more or less acute; those of the younger branches rather ovate and obtuse. Our larger specimens pretty well accord with those gathered by Mr. Matthews (No. 688 in herb. Hook.), near Cerro Pasco, which are doubtless the *A. dicranoides* of Kunth. Those from Alpamarca, &c., have smaller and blunter leaves, and might be referred to *A. bryoides*, Willd. (which, I notice, Walpers, who had original specimens before him, has done with a Peruvian plant gathered by Meyen); but I cannot draw any line between the different forms. Mr. Pentland collected the same species, apparently, without flowers, at La Paz in the Bolivian Andes. The few flowers the specimens furnish are not in good condition. They are sessile at the apex of the branches, apetalous, and with 10 stamens. The styles are 2, or sometimes 3. The ovary contains 5 or 6 ovules, of which only one, perhaps, matures.—In Kunth's detailed description for, "folia 1½–2-pollicaria," we should evidently read, 1½–2 lineas longa.

6. STELLARIA, *Linn.*

1. Stellaria debilis, *D'Urv.*

Stellaria debilis, D'Urv. in Mem. Soc. Linn. Par. 4, p. 618; Hook. f. Fl. Antarc. p. 250.

Hab. Orange Harbour, Fuegia.

Besides the ordinary form of the species, there is a variety, apparently growing in very wet places, which is more cæspitose, depressed, and with longer, crowded, narrowly linear, and gramineous leaves.

2. Stellaria cuspidata, *Willd.*

Stellaria cuspidata, Willd. herb., ex Schlecht. Berl. Mag. 1816; H. B. K. Nov. Gen. & Spec. 6, p. 27; DC. Prodr. 1, p. 396; Gay, Fl. Chil. 1, p. 264.

Hab. Obrajillo, Andes of Peru.

This species resembles the European *S. nemorum;* but the leaves are less petioled, all the upper ones sessile or nearly so. It appears to be rather common from the Quitensian Andes to Valparaiso. *Stellaria leptopetala,* Benth. Pl. Hartw. p. 163, is probably a smaller form of the same species.

3. STELLARIA MEDIA, *Linn.*

HAB. Sydney, New South Wales; and everywhere, in places inhabited by man.

4. STELLARIA CÆSPITOSA, *Hook. f.*

Stellaria cæspitosa, Hook. f. in Hook. Jour. Bot. 2, p. 411?

HAB. Puen Buen, New South Wales.

The specimens consist of the upper part only of a tuft of floriferous stems, in an advanced state, much more developed and prolonged than in Tasmannian specimens of *S. cæspitosa;* of which it seems likely to be merely a many-flowered variety.

5. STELLARIA PUNGENS, *Brongn.*

Stellaria pungens, Brongn. Bot. Voy. Duperr. Coq. t. 78; Hook. f. in Jour. Bot. l. c.
Stellaria squarrosa, Hook. Jour. Bot. 1, p. 250.

HAB. Puen Buen, New South Wales.

7. CERASTIUM, *Linn.*

1. CERASTIUM ARVENSE, *Linn.,* &

Var. FUEGIANUM: *humile; foliis imbricatis; pedicellis solitariis terminalibus; floribus amplis.* Hook. f.

HAB. Orange Harbour, Fuegia.

Both the ordinary form of the species, and some very dwarf ones occur in the collection. The latter are only one or two inches high, with crowded or even *imbricated leaves*, and solitary, short-peduncled flowers: they accord with those referred to this species by Dr. Hooker, as his variety *Fuegianum*.

2. Cerastium vulgatum, *Linn.* (*ex Fries*).

Var. Peruvianum: *caulibus superne pedicellisque glanduloso-pubescentibus; foliis plerumque linearibus; petalis nunc calyce glanduloso paullo longioribus nunc plane nullis!*

Var. Andinum: *nanum, condensatum, vix glandulosum; foliis oblongo-linearibus; petalis calyce paullo brevioribus.*

Hab. Baños, Andes of Peru (var. *Peruvianum*): also gathered near Quito by Prof. Jameson. Above Obrajillo and Alpamarca, on the high Andes of Peru (var. *Andinum*).

The first variety well accords with my specimens of *Cerastium Beeringianum*, Cham. & Schlecht. (which Fenzl., in Ledebour's Flora Rossica, reduces to a form of *C. vulgatum*); except that the flowers are rather more glomerate, and most of the later ones are wholly apetalous, as in a corresponding variety of *C. viscosum*. The upper part of the slender stem and the pedicels are strongly pubescent with spreading glandular hairs, while the calyx is beset with sessile glands. The cauline leaves are all linear, from 6 to 10 lines long, and only a line wide. The capsule, seeds, &c., are just as in *C. vulgatum*. —The var. *Andinum* is, I suppose, a more dwarf and condensed form of the same species, growing at a greater elevation. It is smaller in all its parts and less glandular; the leaves oblong-linear. I think that both belong to the same species, and that they cannot be satisfactorily distinguished from *C. vulgatum*, as that species is now received by Prof. Fenzl.

3. Cerastium viscosum, *Linn.* (*ex Fries*).

Cerastium viscosum, Linn. Spec. ed. 1, p. 437; Curt. Fl. Lond. 2, t. 84; Fries, Novit. Fl. Suec. p. 128; Fenzl, in Ledeb. Fl. Ross. 1, p. 404.

C. vulgatum, Linn. Herb. & Fl. Suec. (excl. syn.); Smith, Fl. Brit. 2, p. 496; DC. Prodr. 1, p. 415.
C. glomeratum, Thuill. Fl. Par. p. 225; Mert. & Koch, Deutch. Fl.; Coss. & Germ. Fl. Env. Par. & Atlas, t. 4, f. b.

Hab. Organ Mountains, near Rio Janeiro. Waiaruru Bay, New Zealand. Doubtless introduced from Europe.

Subord. III. ILLECEBREÆ.

8. SPERGULARIA, *Pers.*

1. Spergularia ramosa, *Camb.*

Spergularia ramosa, Cambes. in St. Hil. Fl. Bras. Mer. 2, p. 178.

Hab. Rio Negro, Northern Patagonia.

The flowers and pods are as large as those of the allied *Spergularia grandis*, of which it may be only a variety. It has a long and thickened, somewhat woody root.

2. Spergularia rubra, *Presl.*

Hab. Woolongong, New South Wales; the var. *marina* (*Arenaria marina*, Smith). Valparaiso, Chili: a slender, small-flowered variety; apparently the same as the *Arenaria floribunda*, of Gay's Flora Chilena.

9. SPERGULA, *Linn.* (excl. sp.)

1. Spergula arvensis, *Linn.*

Hab. Hunter's River, New South Wales. St. Helena.—Doubtless introduced from Europe.

10. POLYCARPÆA, *Lam.*

1. Polycarpæa tenuifolia, *DC.*

Achyranthes tenuifolia, Willd. Spec. 1, p. 1196.
Mollia tenuifolia, Willd. Hort. Berol. no. 11.
Polycarpæa tenuifolia, DC. Prodr. 3, p. 374.
P. glabrifolia, β. rutila, Fenzl, in Pl. Kotsch. It. Nub. no. 83.

Hab. Arid places, St. Jago, Cape de Verde Islands.

This is not enumerated in Mr. Webb's Spicilegia Gorgonea, nor in the Appendix subsequently published, in Hooker's Journal of Botany. The specimens agree with Kotschy's plant, above cited. The linear-subulate leaves are too narrow to accord with the character of DeCandolle's *P. glabrifolia;* but the stipules are pretty large, in which point alone it differs from the character of *Achyranthes tenuifolia*, Willd.

11. POLYCARPON, *Lœfl.*

1. Polycarpon tetraphyllum, *Linn.*

Hab. Madeira. Bay of Islands, New Zealand. Near Sydney and Puen Buen, New South Wales. Doubtless introduced from Europe.

This species is not before noticed as growing in New Zealand, where many European weeds are rapidly becoming naturalized; nor in New Holland, which, however, DeCandolle gives as a habitat of *P. alsinefolium.*

12. DRYMARIA, *Willd.*

1. Drymaria cordata, *Willd.*

Drymaria cordata, Willd. Herb.; Rœm. & Schult. Syst. 5, p. 406; H. B. K. Nov. Gen. & Spec. 6, p. 23; DC. Prodr. 1, p. 395.

Hab. Organ Mountains, and Rio Janeiro, Brazil. Luzon, Philippine Islands; in mountains near Manilla: doubtless introduced.

2. Drymaria rotundifolia, Sp. Nov.

D. glaberrima; caule erecto gracili; foliis orbiculatis vel subreniformibus sessilibus; stipulis obsoletis; cyma corymbosa pluriflora; pedicellis (fructiferis erectis) alaribus flore vix duplo longioribus; sepalis ovalibus obtusissimis petalis paullo brevioribus.

Hab. Obrajillo, Andes of Peru; common.

Stems 4 to 8 inches, according to Dr. Pickering's notes sometimes 2 feet high, from an annual root, *slender, entirely glabrous, erect*, more or less branched. *Leaves roundish;* the upper somewhat *reniform* or subcordate and broader than long, *closely sessile*, sometimes mucronate-acuminate; the lower verging to obovate and more or less contracted at the base, but sessile or nearly so; all glabrous; the cauline ones 3 lines long, by 5 or 6 wide, those of the branches smaller. *Stipules obsolete*, or of one or two very minute setæ on each side, deciduous. *Cymes corymbose*, terminating the stem and branches, on filiform glabrous peduncles 6 to 10, or rarely 18 lines long, 7–15-flowered; the small flowers rather crowded. *Pedicels slender*, glabrous, or very minutely glandular-puberulent, all erect both in flower and fruit; the central ones 2 to 4 lines long; the others only one or two lines long. Bracts ovate-lanceolate, entirely scarious and glabrous, minute. Calyx entirely glabrous, a line and a half long; the *sepals oval, very obtuse*, somewhat carinate at the base, thin, inconspicuously three-nerved, the margins narrowly scarious. *Petals about one-third longer than the calyx*, narrowly cuneiform, white, two-cleft to a little below the middle; the lobes narrowly spatulate; the claw entire. Stamens 5, half the length of the petals. Style three-cleft to the middle. Capsule ovoid, chartaceous, slightly longer than the calyx, three-valved. Seeds 9 or 10, reniform; the testa muricate with rows of small tubercles.

This species is nearly allied to *Drymaria glaberrima*, Bartl. in Presl, Rel. Hænk. (which the late Mr. Matthews collected at Huamantanga); but that has acute or pointed leaves, and acute sepals, while in our plant they are remarkably obtuse.

3. DRYMARIA VISCIDULA, Sp. Nov.

D. caule diffuso glabro; ramulis cum inflorescentia glanduloso-pubescentibus; foliis subreniformi-ovatis in petiolum contractis glabriusculis; stipulis setaceis; cyma corymbosa pluriflora; pedicellis (fructiferis erectis) alaribus flore duplo longioribus; sepalis oblongis acutis glandulosis petala subæquantibus.

HAB. Andes of Peru, with the preceding.

Stems diffuse, a foot long, from an annual root, slender, *glabrous*, except the very summit. *Leaves* 3 or 4 lines long, by 4 or 5 in width, dilated *round-ovate* or *somewhat reniform*, *glabrous* or slightly pubescent, *abruptly contracted into short* and margined, mostly hairy *petioles*, or the lowest cauline with a petiole as long as the blade. *Stipules of 2 or* 3 *capillary* interpetiolar *setæ* on each side, often as long as the petioles, tardily deciduous. *Peduncles* half an inch or an inch long, erect, clothed *with a short glandular and glutinous pubescence*, bearing a *cyme of* 5 *to* 15 *rather crowded flowers*. Bracts setaceous-subulate, glandular. *Pedicels glandular-pubescent* and viscous; the central ones 3 or 4 lines long; the lateral only one or 2 lines long; all *erect* in flower and fruit. Calyx a line and a half long; the *sepals ovate-oblong*, or oblong-lanceolate, with conspicuously scarious-petaloid margins, *acute*, or the narrowed point rather obtuse, three-nerved, *glandular* externally. *Petals scarcely longer than the calyx*, white, narrowly cuneate, two-cleft to the middle; the lobes spatulate. Stamens 5, nearly as long as the petals. Style three-cleft above the middle. Capsule as long as the calyx, 12–15-seeded. Seeds obscurely tuberculate-roughened.

This is at once distinguished from the preceding species by its glandular and viscid peduncles and calyx, its pointed sepals, its smaller and shorter petals, and its petiolate leaves. It can hardly be a smaller form of *D. divaricata*, H. B. K., which is said to have glabrous peduncles, but viscid-pubescent pedicels; for the flowers are considerably smaller than those of *Holosteum umbellatum*, the calyx itself is glandular, and the peduncles and pedicels are not at all divaricate nor reflexed.

4. Drymaria fasciculata, Sp. Nov.

D. glaberrima; caule erecto; foliis sessilibus ovato-oblongis subtrinerviis; pedunculo stricto apice minute glanduloso; floribus subsessilibus scarioso-bracteatis in fasciculum arcte congestis; sepalis glaberrimis oblongo-lanceolatis trinerviis cuspidato-acuminatis margine scariosis petala subæquantibus.

Hab. Andes of Peru, near Obrajillo.

Root annual. Stem a span high, simple or sparingly branched, slender, *erect*, *glabrous*, as is the whole plant. *Leaves* only 3 or 4 pairs, much shorter than the internodes, one-nerved and with a pair of inconspicuous lateral nerves, *sessile*, 5 to 9 lines long; the lower obovate or spatulate; the upper and those of the branches *oblong-ovate*, and acute or acuminate. Stipules very minute, setaceous. *Peduncle erect and strict*, from half an inch to 2 inches long, naked, towards *the summit minutely viscous-glandular*. *Flowers crowded in a dense fascicle*, subtended by oblong-ovate, one-nerved, and cuspidate-pointed, scarious bracts, which are little shorter than the calyx: the primary or central flower on a pedicel of barely a line in length, and much shorter than the calyx; the others nearly or quite *sessile*. Calyx 3 lines long; the *sepals perfectly glabrous*, *lanceolate-oblong*, *acutely pointed*, thin, with rather broad *scarious margins*, conspicuously *three-nerved* near the middle. *Petals* 5, *slightly exceeding the calyx*, white, oblong-linear, two-lobed above the middle, the lobes linear-oblong; the dilated claw entire. Stamens 5, rather shorter than the petals. Style slender, three-cleft above the middle; the recurved branches stigmatose. Capsule shorter than the calyx, membranaceous, three-valved, about twelve-seeded. Seeds circinnate, as in the genus, scabrous with very minute points arranged in lines.

The compact fascicles of flowers, imbricated with large scarious bracts, abundantly distinguish this from any described species of *Drymaria*, nor is there any one with which I can particularly compare it, excepting the following; which makes some approach to it in the inflorescence.

5. Drymaria macrantha, Sp. Nov.

D. glabella, multicaulis; caule laxe ramoso; foliis cordato-ovatis sessilibus 3–5-nerviis crassiusculis; bracteis subulatis; cyma multiflora conferta; pedicellis centralibus flore æquilongis; sepalis ovato-oblongis late petaloideo-marginatis; petalis nullis.

Hab. With the preceding.

Root and base of the stem not seen. *Stems* said to be *numerous* and upright, a foot high: they are rather *diffusely branched* in the specimens, with approximate and tumid nodes, *nearly glabrous*, or the branches, like the inflorescence, puberulent. *Leaves* 5 to 7 lines long, broadly *ovate and somewhat cordate*, acute, or the upper pointed, *sessile*, glabrous or nearly so, 3–5-*nerved*, the larger ones five-nerved, of a *rather thick* and fleshy texture. Peduncles an inch or less in length. *Cyme* 10–20-*flowered*, *rather close* and fasciculate. Bracts narrowly subulate, greenish, with narrow scarious margins below, slightly puberulent, 2 or 3 lines long. *Pedicels* puberulent: the primary central ones 3 to 6 lines long, usually *about the length of the calyx*. *Sepals ovate-oblong*, 4 or 5 lines long, minutely glandular-puberulent externally, slightly three-nerved, acute, except for the *broad and petaloid hyaline margins*, which are broadest near the summit. *Petals none*. Stamens 5. Style short, 2–3-cleft. Capsule coriaceous, ovoid, shorter than the calyx, three-valved, many-seeded. Seeds obliquely obovate, minutely scabrous. Embryo uncinate-incurved.

This is the largest-flowered species known. The flowers are twice the size of those of the Chilian *D. apetala*, and a third larger than those of *D. grandiflora*, Bartl.; which, moreover, is described as having very long peduncles, and pedicels many times longer than the calyx, the sepals obscurely one-nerved, and the petals conspicuous.

13. CORRIGIOLA, *Linn.*

1. Corrigiola squamosa, *Hook. & Arn.*

Corrigiola squamosa, Hook. & Arn. Bot. Misc. 3, p. 337; Gay, Fl. Chil. 2, p. 518.

HAB. Valparaiso, Chili; abundant in sand on the sea-shore.

14. PARONYCHIA, *Juss.*

1. PARONYCHIA ILLECEBROIDES, *Webb.*

Paronychia illecebroides, Webb, Spicil. Gorg. in Hook. Niger Flora, p. 106, t. 7; Hook. Ic. Pl. t. 756.
Herniaria illecebroides, Chr. Smith, in Tuck. Voy. p. 250, ex. Herb. Mus. Brit.

HAB. St. Jago, Cape Verde Islands; on rocks near the coast.

2. PARONYCHIA CHILENSIS, *DC.*

Paronychia Chilensis, DC. Prodr. 3, p. 370; Hook. & Arn. Bot. Misc. 3, p. 337; Gay, Fl. Chil. 2, p. 521.

HAB. Near Valparaiso.

3. PARONYCHIA COMMUNIS, *Camb.*

Paronychia communis, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 186.

HAB. Rio Negro, North Patagonia; in sandy soil.

This species is nearly allied to *Paronychia Chilensis* (from which *P. Coquimbensis*, Gay, Fl. Chil., seems hardly distinct); and, indeed, I can only distinguish it by its shorter leaves (only three or four lines long) and minuter pubescence. The suffrutescent stems spread, in great numbers, from the crown of the long and thick, perpendicular root. The tips of the sepals are either obscurely or manifestly mucronate-pointed.

4. PARONYCHIA BONARIENSIS, *DC.*

Paronychia Bonariensis, DC. Prodr. 3, p. 370? Presl. Rel. Hænk. 2, p. 6; Walp. Rel. Meyen. p. 301.
P. Brasiliana, DC. in Lam. Dict. 5, p. 23? St. Hil. Fl. Bras. Mer. 2, p. 186?

HAB. Baños, Andes of Peru.

It would seem unlikely that an Andine Peruvian species should be the same as one from Monte Video. But our specimen accords with the character of *Paronychia Bonariensis*, having a smooth calyx, the laciniæ of which are tipped with slender and straight awns, &c. Moreover, the Peruvian plant of Meyen's collection, here referred by Walpers, appears to have been compared with a specimen communicated by Poiret to the Willdenovian herbarium.

5. Paronychia Andina, Sp. Nov.

P. glabella; caulibus multicipitibus e radice lignescente depressis cæspitoso-confertis; foliis coriaceis confertissimis ovato-oblongis enerviis cymbæformibus aristulatis stipulas vix superantibus; floribus bracteis stipularibus occultatis capitato-congestis; calyce extus puberulo, laciniis oblongis late scariosis sub apice cucullato aristulatis.

Hab. Baños; Casa Cancha to Culnai and Alpamarca, in the high Andes of Peru. (Also gathered in the same region by Mr. M'Lean, and at Cerro Pasco by Mr. Matthews.)

Root perennial and somewhat woody, perpendicular, 6 to 10 inches long; the crown dividing into numerous, *depressed, much crowded, and tufted*, branching stems, which are 2 or 3 inches long, a little woody at the base, *nearly glabrous*, clothed with the oblong-lanceolate scarious stipules, which are imbricate-crowded and much longer than the internodes. *Leaves thickish and coriaceous, much crowded*, or almost imbricated (the older ones more or less spreading), opposite, closely sessile, *scarcely longer than the conspicuous stipules*, a line or a line and a half long, *ovate-oblong*, more or less convex below and concave above, so as to appear *boat-shaped*, or else involute, destitute of a carinate midrib and of veins, minutely puberulent, or nearly glabrous, somewhat ciliolate, conspicuously *awn-pointed*. *Flowers* subsessile, *covered by ovate and more or less connate, stipular, silvery-scarious bracts*, which exceed and hide the floral leaves, forming a *capitate-crowded* inflorescence at the summit of the branches. *Calyx* thin, very minutely *puberulent* externally under a lens, deeply five-cleft; the *lobes oblong*, equal, the greater part *scarious*, the cucullate apex obtuse; the midrib just below the apex produced into a *very short but distinct* *awn*, which is hardly a quarter of the length of the lobe. Petals, or staminodia, 5, setaceous, shorter than the sepals, a little longer than the 5 stamens. Style two-parted; the lobes slender. Ovary, seed, &c., as in the genus.

This appears to be a common species in that part of the Peruvian Andes which was visited by the Naturalists of the Expedition. It extends from Baños, which is only 10,000 feet above the sea-level, to the limit of vegetation above Alpamarca. It varies somewhat in form; the specimens from the higher regions being more condensed, and exhibiting almost the aspect of a *Colobanthus*. I do not find that it has before been described, nor do I know of any species with which it may be particularly compared.

6. Paronychia ramosissima, *DC.*

Paronychia (Acanthonychia) ramosissima, DC. Prodr. 3, p. 372, & Mem. Paronyc. t. 4; St. Hil. Fl. Bras. 2, p. 188; Torr. & Gray, Fl. N. Amer. 1, p. 172.
Pentacæna polycnemoides, Bartl. in Presl. Rel. Hænk. 2, p. 5, t. 49; Walp. Repert. 1, p. 261.
P. ramosissima, Hook. & Arn. Bot. Misc. 3, p. 338; Gay, Fl. Chil. 2, p. 523.

Hab. Valparaiso, Chili. Rio Negro, North Patagonia.

The inequality of the sepals, unsupported by other characters, hardly entitles this plant to the rank of a genus. The leaves are not alternate, as is said by Fenzl (in Endlicher's Genera), but uniformly opposite.

Subord. IV. SCLERANTHEÆ.

15. MNIARUM, *Forst.*

1. Mniarum biflorum, *Forst.*

Mniarum biflorum, Forst. Char. Gen. 1, t. 1; R. Br. Prodr. Nov. Holl. p. 413; DC. Prodr. 3, p. 378; Raoul, Enum. Pl. Nov. Zel. p. 43.

M. pedunculatum, Labill. Fl. Nov. Holl. 1, p. 8, t. 2.
Ditoca muscosa, Gærtn. Fruct. & Sem. 2, p. 196, t. 126, f. 1.

Hab. Waia-ruru Bay, New Zealand. (Without flowers or fruit.)

Subord. V. MOLLUGINEÆ.

16. MOLLUGO, *Linn.*

1. MOLLUGO VERTICILLATA, *Linn.*

Mollugo verticillata, Linn. Spec. 1, p. 89; Torr. & Gray, Fl. N. Amer. 1, p. 176; St. Hil. Fl. Bras. Mer. 2, p. 170; Fenzl, Mollug. in Ann. Wien. Mus. 2, p. 376.
M. dichotoma, Schrank, Pl. Rar. Hort. Monac. t. 64 (forma angustif.).
M. Schrankii & M. Berteriana, Seringe, in DC. Prodr. 1, p. 391.

Hab. Rio Janeiro, Brazil, on the sea-beach; only the narrow-leaved variety (*β. linearis*).

This species is found from Canada to Southern Brazil, but is seldom here met with far from the habitations of man. Whether it had so wide an original range is therefore doubtful. In the United States, it always appears like an introduced plant.

2. MOLLUGO NUDICAULIS, *Lam.*

Mollugo nudicaulis, Lam. Dict. 4, p. 234; Seringe, in DC. Prodr. 1, p. 391; Fenzl, Mollug. l. c. p. 382.
M. bellidifolia, Seringe, in DC. l. c.; Webb, Spicil. Gorg. in Hook. Nig. Fl. p. 104.

Hab. St. Jago, Cape de Verde Islands; only the variety *bellidifolia*.

3. MOLLUGO STRICTA, *Linn.*

Mollugo stricta, Linn. l. c.; DC. Prodr. 1, p. 391; Fenzl, Mollug. l. c. p. 380.
M. triphylla, Lour. Fl. Cochin. ed. 2, p. 79; DC. l. c. p. 392.

HAB. Feejee Islands; common in cultivated grounds, at Ovolau, Muthuata, and Sandal-wood Bay.

The specimens are intermediate between the original *M. stricta* of Linnæus and the *M. triphylla* of Loureiro.

17. COLOBANTHUS, *Bartl.*

1. COLOBANTHUS MUSCOIDES, *Hook. f.*

Colobanthus muscoides, Hook. f. Fl. Antarc. p. 14; Walp. Repert. 5, p. 788.

HAB. Auckland Islands; collected only by Dr. Holmes.

This species and the next, from their fleshy character, have quite the aspect of *Portulaceæ*, to which Fenzl refers the whole tribe of *Mollugineæ*, on account of the position of their stamens. *C. muscoides* grows in large and very compact, moss-like tufts.

2. COLOBANTHUS CRASSIFOLIUS, *Hook. f.*

Colobanthus crassifolius, Hook. f. Fl. Antarc. p. 248; Homb. & Jacquinot, Bot. Voy. Pol. Sud. Phanerog. t. 17.

C. Quitensis & C. saginoides, Bartl. in Presl. Rel. Hænk. 2, p. 13, t. 49 (excl. syn. H. B. K.)

Sagina crassifolia, D'Urv. in Mem. Soc. Linn. Par. 4, p. 617; Gaud. Bot. Voy. Freyc. p. 137.

Var. *β. caulibus brevissimis dense cæspitosis; capsula matura calycem superante.*

Colobanthus arctioides, Gillies, in Hook. & Arn. Bot. Misc. 3, p. 336.

HAB. Orange Harbour, Fuegia; where it is very abundant. Casa Cancha, Andes of Peru. Var. *β.* Cordilleras above Santiago, Chili.

I see no difference between the specimen from the high Andes of Peru, at Casa Cancha, and the more condensed states of the species from Antarctic America. The Chilian specimens, which also have very short and densely cæspitose stems, are in mature fruit, with the pods dehiscent, and their valves considerably longer than the calyx; they belong therefore to a variety which Dr. Hooker has indicated. None of our plants show any trace of the four bracts on the peduncle, which Kunth's *Sagina Quitensis* is said to bear.

3. COLOBANTHUS SUBULATUS, *Hook. f.*

Colobanthus subulatus, Hook. f. Fl. Antarc. p. 13 & 247, t. 93.
C. Benthamianus, Fenzl, in Endl. Atakt. t. 49, & Ann. Wien. Mus. I, p. 49.
Sagina subulata, D'Urv. in Mem. Soc. Linn. Par. 4, p. 618.

HAB. Orange Harbour, Fuegia; where it abounds, growing in broad and close tufts.

This species, which is admirably figured and characterized by Dr. Hooker, is more rigid and pungent than any of its congeners.

18. SCHJEDEA, *Cham. & Schlecht.*

Calyx quinquepartitus, persistens. Corolla nulla. Staminodia, vel squamulæ petaloideæ, 5, ligulata, apice bifida, imo calyci inserta, sepalis opposita. Stamina fertilia 10, *capillaria, imo calyci inserta, quinque sepalis alterna, quinque iisdem opposita cum basi staminodiorum accreta. Styli* 3, *rarius* 4–5, *intus stigmatosi. Ovarium uniloculare; ovulis plurimis columellæ centrali affixis. Capsula trivalvis, raro* 4–5-*valvis. Semina plurima, estrophiolata. Embryo annularis, albumen farinaceum cingens.—Suffrutices Sandwicenses, oppositifolii, exstipulati, cymulis in thyrsum interruptum digestis, vel paniculatis patentissimis.*

SCHIEDEA, Cham. & Schlecht. in Linnæa, 1, p. 46; Fenzl, in Endl. Atakt. Bot. t. 14; Endl. Gen. no. 5192; Hook. Ic. Pl. t. 649, 650.
EUCLADUS, Nutt. MSS. in Herb. Hook.

The essential character of this genus inheres in the petaloid bodies which Chamisso and Schlechtendal took for true petals, and incautiously described as alternate with the sepals; whereas they stand before them, as was first stated by Fenzl, who called them *parastemones*, but apparently did not notice their connexion with the base of those stamens which stand before them. If these petaloid bodies represent, as they probably do, the primary series of stamens, the genus is not Portulacaceous, according to Fenzl's own distinguishing characters.—Some years ago, Sir Wm. Hooker (in Icones Plantarum, l. c.) figured a second species of the genus, of widely different habit from the original *S. ligustrina*, and likewise indicated a third species, *S. Menziesii*. But the plant he took for *S. ligustrina* is, moreover, a fourth species, which, like *S. Menziesii*, has strongly three-nerved leaves, in this respect differing from the rest of the genus. The collection of the Exploring Expedition comprises the true *S. ligustrina*, and a new, narrow-leaved species allied to it; also *S. Nuttallii*, and a well-marked new species of that group, with effuse panicles and acute sepals.*

1. Schiedea ligustrina, *Cham. & Schlecht.*

S. glaberrima; panicula thyrsoidea contracta e cymulis brevibus; foliis oblanceolatis lanceolatisve basi attenuatis sessilibus acutatis uninerviis; sepalis obtusis; seminibus muricatis.

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* The species now known of this curious genus may be disposed as follows:—

* *Panicula thyrsoidea, contracta, interrupta, nuda: folia uninervia.*

1. Schiedea ligustrina, Cham. & Schlecht. Vide supra.

2. Schiedea spergulina, Sp. Nov. Vide infra, p. 135.

* * *Panicula contracta, ramosa, deliquescens: folia trinervia.*

3. Schiedea Menziesii, Hook. Ic. Pl. fol. 649, adnot.

4. Schiedea Hookeri: *glabra; panicula elongata laxiflora basi foliosa; pedicellis pedunculisque filiformibus patentibus; foliis membranaceis lanceolatis acutis eximie trinerviis nunc quinquenerviis basi supra insertionem connatam abrupte contractis; sepalis obtusiusculis.—S. ligustrina*, Hook. l. c. adnot, non Cham. & Schlecht. (Sandwich Islands, probably Hawaii, Menzies.)

* * * *Panicula deliquescens, effusa: sepala acuminata: folia uninervia, lata.*

5. Schiedea Nuttallii, Hook. Vide infra, p. 137.

6. Schiedea diffusa, Sp. Nov. Vide infra, p. 138.

Schiedea ligustrina, Cham. & Schlecht. in Linnæa, 1, p. 46; Fenzl, in Endl. Atakt. Bot. t. 14, & Ann. Wien. Mus. 2, p. 273.
Portulacea, Hook. & Arn. Bot. Beech. Voy. p. 188.

HAB. Oahu, Sandwich Islands; common on arid plains of the Kaala Mountains, in the district of Waianae.

Plant *wholly glabrous* in every part, in our specimens only a foot high (sometimes 3 feet high), *shrubby*, except the flowering shoots, upright, dichotomously much branched; the older stems 2 lines in diameter, covered with gray bark; the branches rather strict, with tumid internodes; the older ones nearly terete, those of the season four-angled and more or less flattened. *Leaves* all opposite and connate at the insertion, in the manner of the order, thickish, from an inch to 2 inches long, varying from *obversely lanceolate* or oblong-spatulate to *narrowly lanceolate*, and from 3 to 1½ lines in width, broadest above the middle, thence *gradually narrowed to the base*, but *sessile*, tipped with a short and abrupt or mucronate point, *one-nerved*, or very obscurely triplinerved (the lateral nerves and minute veins obsolete or hidden), but not at all three-nerved; the margins thickish, often slightly revolute. Sometimes a few smaller leaves are fascicled in the axils, on undeveloped branches. Inflorescence a narrow and strict *interrupted thyrsus, or contracted panicle*, from 2 to 4 inches long, terminating the branches, composed of four or five pairs of subsessile or *short-peduncled and many-flowered cymules;* the lower pairs from half an inch to an inch apart, the upper ones approximate. Bracts very small, ovate or subulate, or only the lower pair foliaceous. Pedicels 1½ to 6 lines long, capillary, thickened at the apex. Flowers small; the *sepals* of the five-parted (or occasionally 4–6-parted) calyx only a line or a line and a half long, ovate or oblong, very *obtuse*, somewhat fleshy, with scarious margins, obsoletely three-nerved. Corolla none. Staminodia (in place of the first series of stamens) petaloid, inserted into the base of the calyx opposite the sepals, more or less shorter than they are, persistent, narrowly linear, white, more or less thickened at the base, where they are hollowed into a concavity inside, the apex deeply two-cleft; the slender lobes subulate. Fertile stamens 10, unequal, five of them inserted into the base of the calyx alternate with its divisions, and five opposite the divisions and inside of the staminodia, with which the base of their filaments is coherent: in the tetramerous flowers the stamens are 8, in the hexamerous, 12.

Filaments capillary, elongated and exserted, but of variable length, persistent. Anthers oblong, two-celled. Ovary obovoid, one-celled, many-ovuled. Styles 3, or sometimes 4, capillary, stigmatose down the inner side. Ovules campylotropous, inserted on a central columella. Capsule ovoid, three-valved to the base, rarely four-valved, a little longer than the calyx; the valves chartaceous, at length two-toothed at the apex. Seeds several, minute, roundish, slightly compressed, with a crustaceous and acutely tuberculate or *muricate testa*. Embryo coiled into an almost complete ring, around the sparing farinaceous albumen.

Although our specimens have not been compared with those of Chamisso, yet the habitat, the detailed description, and a tracing which I possess of the figure above-cited in the rare Atakta Botanica, leave no doubt of their identity. The inflorescence has justly been compared with that of *Silene Otites*, although the flowers are much smaller. The leaves, also, are not unlike those of that plant, although more crowded on the woody stem. The original authors describe them as triplinerved, but with the lateral veins immersed and obsolete. Fenzl more correctly calls them one-nerved; and in our specimens there is scarcely a trace of lateral nerves.—To this species belongs the "Portulacaceous" plant described, without a name, in the Botany of Beechey's Voyage, p. 188, which was received in a package of plants from China, and therefore was supposed to have been collected in that country; but it doubtless came from Oahu.—The plant of Menzies' collection, which Hooker mentions, in Icones Plantarum, l. c., under the name of *S. ligustrina*, is a wholly different species, with a deliquescent panicle and with conspicuously three-nerved leaves, like those of *S. Menziesii*. (Vide p. 133.)

2. Schiedea spergulina, Sp. Nov. (Tab. 11.)

S. panicula thyrsoidea contracta e cymulis brevibus puberulis; foliis angustissimis filiformibus uninerviis fasciculatis; sepalis obtusis; seminibus fere lævibus.

Hab. On the Mountains of Kauai, one of the Sandwich Islands.

Stem shrubby, erect, apparently one or two feet high, terete, nodose, much branched, the branches very leafy, glabrous. *Leaves* opposite, spreading, approximate (the internodes varying from a quarter of an inch to an inch in length) and usually with smaller ones *fascicled* in their axils, thus appearing much crowded, *filiform*, or nearly so, the larger ones 2 inches long and only half a line wide, *one-nerved*, involute, or channelled above, mucronulate, glabrous, their bases connate by a narrow membrane, not at all stipulate. Inflorescence a narrow and crowded, interrupted thyrsus, much like that of *Schiedea ligustrina*, composed of from 3 to 5 pairs of many-flowered cymules; the lower pairs mostly rather distant, and sometimes prolonged; the upper ones approximate. Bracts of the lower pairs like the cauline leaves; of the upper, very short, ovate-subulate. *Peduncles and pedicels minutely pubescent*, one or two lines long. Calyx campanulate, a line or less in length, five-parted; the *sepals* ovate, *obtuse*, rather fleshy, but with narrow hyaline margins, nearly nerveless, very slightly pubescent externally near the base, persistent. Staminodia 5, petaloid, inserted into the very base of the calyx, one opposite each sepal, at first short, at length almost equalling them in length, linear-subulate, thickened at the base, where they are concave and apparently nectariferous on the inner side, persistent. Fertile stamens 10, five of them inserted into the base of the calyx alternate with its divisions, and five inserted before the staminodia, with the base of which they cohere. Some of the flowers are tetramerous and octandrous. Filaments capillary, elongated and exserted, persistent. Anthers oblong, two-celled. Ovary ovoid, one-celled, with about 15 campylotropous ovules on a free central placenta. Styles 3, capillary, stigmatose on the inner face. Capsule ovoid, three-valved, a little longer than the calyx. Seeds several, minute, reniform; the *testa* obscurely tuberculate or roughened, *nearly smooth*.

This species is a strict congener of *S. ligustrina;* and is remarkable for its very narrow and fascicled leaves, not unlike those of the common *Spurrey*.

PLATE 11, *A*.—SCHIEDEA SPERGULINA. Fig. 1. A flower. 2. A sepal. 3. A staminodium, with the stamen coherent with its base. 4. A stamen of the other series. 5. Pistil, with the ovary longitudinally divided. 6. Dehiscent capsule, with the persistent calyx, &c. 7. A seed.—All the details more or less magnified.

3. Schiedea Nuttallii, *Hook.*

S. glaberrima; panicula ampla ramosissima patentissima; foliis breviter petiolatis oblongis ovatis seu ovato-lanceolatis crassiusculis obscure penninerviis; sepalis ovatis acuminatis capsula brevioribus; seminibus tuberculatis.

Schiedea Nuttallii, Hook. Ic. Pl. t. 649, 650; Walp. Repert. 5, p. 789.
Eucladus suffruticosus, Nutt. in herb. Hook.

Hab. Oahu, Sandwich Islands; on rocks, near Honolulu; where it was also collected by Nuttall, and recently by B. Seemann, in the cruise of the British surveying ship, Herald. Also on the mountains of the west side of Maui? (the specimen not in flower).

Plant *entirely glabrous.* Stems branched from the base, suffruticose, 2 or 3 feet high; the branchlets spreading, angled. *Leaves of a thick texture*, opposite, 2 or 3 inches long, and 12 to 18 lines wide, or the lower considerably larger, *oblong, ovate, or* the upper *ovate-lanceolate*, obtuse and abruptly apiculate, the lower rounded, the upper mostly acute at the base, short-petioled, marked with a rather prominent midrib, but with no lateral nerves, *obscurely pinnately-veined. Panicle* terminal, *compound, deliquescent, ample*, sometimes a foot long, *diffusely spreading;* the slender branches elongated, *divergent*, subtended by small ovate-subulate bracts, or the lowest by small leaves. Pedicels capillary, 3 to 6 lines long, glabrous. Calyx a line and a half long, five-parted; the *sepals ovate-lanceolate, acuminate*, rather fleshy, with whitish hyaline margins, persistent. Staminodia, stamens, pistil, &c., nearly as in the other species of the genus. *Capsule* ovoid-oblong, *longer than the calyx*, three-valved, few-seeded. *Seeds tuberculate-roughened.* Embryo curved around the farinaceous albumen into almost a complete ring.

This species and the next are undoubted congeners of the preceding ones, notwithstanding the effuse paniculate cymes, and the acute sepals. There is only a single and poor flowering specimen of *S. Nuttallii* in the collection.

4. SCHIEDEA DIFFUSA, Sp. Nov.

S. glabella; panicula effusa, pedunculis pedicellisque capillaribus puberulis; caulibus diffusis reclinatis herbaceis; foliis membranaceis oblongo-lanceolatis acuminatis breviter petiolatis uninerviis venulosis; sepalis ovato-lanceolatis acuminatis capsulam plerumque 5-valvem æquantibus; seminibus lævissimis.

HAB. Hawaii, Sandwich Islands; in the forests of Mouna Kea and Mouna Loa. Also on mountains of the west side of the island of Maui.

Stems herbaceous nearly to the base? slender, several feet in length, terete, *reclining, loosely branched, glabrous* or *nearly so;* the branches more or less angular, tumid at the nodes. *Leaves oblong-lanceolate, acuminate,* often very much so, either rounded or acute at the base, 3 or 4 inches long, on petioles of about 3 lines in length, their texture thin and *membranaceous,* glabrous or nearly so, with a rather conspicuous midrib, but no lateral nerves, pinnately veined by transmitted light. *Panicle compound, effuse, very loose,* from 6 to 20 inches long when fully developed; the branches, peduncles, and pedicels *capillary, minutely pubescent,* sometimes nearly glabrous, the latter from one to two inches long in fruit. Lower bracts often foliaceous, lanceolate or linear; the others subulate or setaceous. Calyx five-parted, glabrous; the *sepals* 2 lines, or in fruit 3 lines long, ovate, or *ovate-lanceolate, much acuminate,* obscurely 3–5-nerved at the base, with narrow scarious margins. Staminodia 5, inserted into the very base of each sepal, shorter than it, narrowly subulate, two-cleft at the apex, persistent. Fertile stamens 10, inserted into the base of the calyx, five alternate with the sepals, and five opposite them within the staminodia, with the very base of which they are slightly coherent. Filaments capillary, about twice the length of the calyx. Anthers two-celled. Ovary ovoid, one-celled, many-ovuled; the campylotropous ovules on slender funiculi, inserted on a free central placenta. Styles mostly 5, sometimes 3, capillary, minutely downy. *Capsule* ovoid, membranaceous, nearly 3 lines long, *not exceeding the persistent calyx,* three-valved, or more commonly *five-valved;* the valves membranaceous, opposite the sepals when they are equal in number. *Seeds* indefinitely numerous (at least in pentamerous capsules), lenticular, with a perfectly *smooth and even* testa. Embryo curved into almost a complete ring around the farinaceous albumen.—The panicle, at first terminal, often becomes lateral or alar by the development of branches from its base, which overtop it.

PLATE 11, *B.*—SCHIEDEA DIFFUSA. Fig. 8. Capsule, with the persistent calyx, filaments, &c. 9. A seed. 10. The seed vertically divided, showing the embryo coiled around the albumen.—The details all more or less magnified.

ORD. PORTULACACEÆ.

I. PORTULACA, *Tourn.*

1. PORTULACA OLERACEA, *Linn.*

Portulaca lutea, Soland. in Forst. Pl. Esc. Ins. Austr. p. 72 (abs. char.).

HAB. Clermont Tonnerre, Wake's, Gardiner's, Binney's, and other Coral Islands. Navigators' Islands.

This is enumerated in Dr. Pickering's list under the name of *Portulaca lutea* of Forster, which it undoubtedly is, as distinguished from the *P. oleracea;* but the specimens do not furnish any tangible distinctive characters. I find no specimens from the Society Islands, but Dr. Pickering mentions "*P. oleracea* (not *lutea*)," as an introduced plant there, growing in cultivated grounds.

2. Portulaca quadrifida, *Linn.*

Hab. Tongatabu, Samoan, and Feejee Islands; near the coast.

3. Portulaca hirsutissima, *Camb.*

Portulaca hirsutissima, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 191, t. 114.

Hab. Low grounds, near Rio Janeiro, Brazil.

Accords with the figure above-cited, except that the testa of the seed is perfectly smooth and shining. "Flowers purple."

4. Portulaca pilosa, *Linn.*

Portulaca pilosa, Linn.; Gærtn. Fruct. 2, p. 212, t. 128, f. 4; Cambess. l. c.

Hab. On hills, near Rio Janeiro.

The seeds, in the single specimen gathered, are obscurely muricate; while in the North American plant they are strongly muricate, as in the figure of Gærtner above cited.

5. Portulaca villosa, *Cham.*

Portulaca villosa, Cham. in Linnæa, 6, p. 565; Walp. Repert. 2, p. 234.

Hab. Sandwich Islands: on Diamond Hill, and on the plains near Ewa, Oahu.

"Flowers fine purple;" the petals 5 or 6 lines long, rather longer than the sepals. It appears scarcely different from *P. pilosa*, except in the seeds, which are *smooth*, or, when considerably magnified, minutely marked with sinuous areolations.

6. Portulaca sclerocarpa, Sp. Nov.

P. (*Teretifoliæ*) *radice carnosa tuberosa; foliis subulatis fasciculis pilorum paullo longioribus; floribus sessilibus ad apicem ramorum congestis* (*pallidis*); *capsula sphærica coriacea juxta basim sero circumscissa; seminibus lævibus.*

Hab. Sandwich Islands: district of Waimea, Hawaii. Also? on sand-hills, Maui.

Root fleshy and tuberous, about half an inch in diameter, apparently not ligneous. Stems also thickened at the base, 2 or 3 inches high, much branched. *Leaves terete, subulate*, 4 lines long, crowded, resembling those of *P. pilosa*, somewhat exceeding the copious tufts of fulvous bearded hairs that clothe the nodes. Flowers sessile and crowded at the apex of the branches, apparently smaller than in *P. pilosa*, "very pale" (the particular colour not recorded). *Capsule spherical*, 1½ to 2 lines in diameter, with very thick walls of a firm *coriaceous* or almost crustaceous texture, adherent to the calyx-tube only at the very base, a little above which it is marked with the circum-sessile line of dehiscence. The dehiscence is extremely tardy: the ripe pods in the specimens fall away entire from the peduncle, and afterwards open by the separation of the short basal portion (which is also much thickened internally) only on the application of pressure. Placentæ 8, elongated, crustaceous, bearing many seeds on short funiculi. *Seeds smooth*, shining, minutely and closely areolate under a powerful lens.

Unless the fruit is in abnormal condition (of which there is no indication), this species is well distinguished by its spherical and almost crustaceous capsule, which on a smaller scale somewhat resembles the fruit of *Coix Lachryma*. The Hawaiian specimen is dwarf and depressed; that from Maui is taller, and more like *P. pilosa*, although with a tuberous root; and having no ripe fruit, I am doubtful whether it really belongs to this species.

2. SESUVIUM, *Linn.*

1. SESUVIUM PORTULACASTRUM, *Linn.*

HAB. Rio Negro, North Patagonia. Feejee Islands; Tongatabu; and Wake's Island; on the border of lagoons.

The specimens from Rio Negro show that Cambessedes (in St. Hil. Fl. Bras. 2, p. 199) has rightly referred to this species the *S. parviflorum*, DC. They entirely resemble the North American plant: their flowers are mostly as large, and on short but manifest peduncles. The South Sea Islands specimens are usually more rigid; the stems apparently suffrutescent at the base.

3. TALINUM, *Adans.*

1. TALINUM PATENS, *Willd.*

Talinum patens, Willd. Spec. 2, p. 862; DC. Prodr. 3, p. 357; Hook. & Arn. Bot. Beech. Voy. p. 63; Guillem. Zeph. Tait. p. 56.

HAB. Tahiti and Eimeo, Society Islands. "An introduced weed, in cultivated ground." As it is not mentioned by Forster, it has probably been introduced, from the American continent, in more recent times.

4. CALANDRINIA, *H. B. K.*

1. CALANDRINIA GLAUCA, *Schrad.*

Calandrinia glauca, Schrad. in DC. Prodr. 3, p. 359; Gay, Fl. Chil. 2, p. 487.

HAB. Maritime cliffs, near Valparaiso, Chili.

The stems are said to attain the height of three feet, and the leaves are rather ovate or obovate than lanceolate-spatulate. The flowers are large and red-purple.

2. CALANDRINA ARENARIA, *Cham.*

HAB. Environs of Valparaiso. (Destitute of flowers and fruit.)

3. CALANDRINIA BIFLORA, *Meyen.*

Calandrinia biflora, Meyen, Riese, 1, p. 349; Walp. Rel. Meyen, p. 340.
C. acuta, Meyen, MSS. in Herb. ips. et Hook.
C. Gayana, Barneoud, in Gay, Fl. Chil. 2, p. 503?

VAR. GLANDULOSA: *caulibus floriferis foliisque acutis glandulosis; sepalis basi parce echinatis hirto-glandulosis.*

HAB. Andes of Chili, on the first Cordillera above Santiago.

The specimens are in fruit only, and with the capsules dehiscent. Stems or branches 2 or 3 inches long, from a procumbent and slender, perhaps lignescent base, slender, minutely *glandular*, as well as the leaves. The latter are only from 4 to 6 lines long, rather lanceolate than linear, acute, attenuate at the base, about a line wide; those at the base clustered and often spatulate. Flowers terminal, solitary or in pairs; peduncles half an inch in length. Sepals 5 or 6 lines long, broadly ovate, obtuse, obscurely denticulate, or the inner one entire, *glandular-hispid*, and beset, especially towards the base, with scattered and stout *glandular-roughened setæ* or *echinate* projections. Capsule longer than the calyx, three-valved. Seeds (principally shed) nearly smooth, inappendiculate.

4. CALANDRINIA PHACOSPERMA, *DC.*

Calandrinia Phacosperma, DC. Prodr. 3, p. 359? (*Phacosperma Peruviana*, Haw.?)

HAB. Baños and Obrajillo, Andes of Peru.

The specimens are too poor for exact dotermination. The plant is allied to *C. caulescens*, H. B. K., but is much smaller in all its parts. The subspatulate-linear leaves are sparingly hispid along the margins.

5. Calandrinia Pickeringii, Sp. Nov.

C. glabra; radice tuberosa; caulibus simpliciusculis (tripollicaribus); foliis omnibus alternis linearibus carnosis, supremis ad bracteas minimas ovato-subulatas reductis; floribus racemosis; pedicellis erectis flore subæquilongis; staminibus 3.

Hab. Woolongong, New South Wales.

Stems numerous from the *tuberous root*, rather slender, about 3 inches high, simple or forked, leafy, *glabrous*, as is the whole plant. *Leaves all alternate, fleshy*, sessile; the radical linear-oblong; the cauline *linear*, obtuse, apparently almost terete, narrowed towards the base, half an inch long. Raceme terminal, erect, simple or sometimes forked, 6–10-flowered. *Pedicels erect*, from one to 2½ lines long, opposite the minute *ovate subulate bracts*. Flowers small, about two lines in length. Sepals ovate, obtuse. Petals (purplish?) obovate, longer than the calyx. *Stamens* 3. Ovules 15 to 20. Capsule three-valved, longer than the persistent calyx, 10–12-seeded. Seeds compressed, minutely muricate-roughened.

Several Australian species of *Calandrinia* have recently been published: but this accords with none of them.

5. MONTIA, *Mich.*

1. Montia fontana, *Linn.*

Hab. On the high Andes of Chili above Santiago, near the snow-line.

6. TETRAGONIA, *Linn.*

1. Tetragonia expansa, *Ait.*

Hab. Maritime sands, near Valparaiso (where it was also gathered by Bertero); "native." Sydney, New South Wales.

ORD. MESEMBRYANTHEMEÆ.

1. MESEMBRYANTHEMUM, *Linn.*

1. MESEMBRYANTHEMUM NODIFLORUM, *Linn.*

HAB. Madeira, on the coast east of Funchal.

2. MESEMBRYANTHEMUM GLAUCUM, *Linn.*

HAB. Cape of Good Hope, in the vicinity of Cape Town.

3. MESEMBRYANTHEMUM TENUIFOLIUM, *Linn.*

HAB. Cape of Good Hope; with the preceding.

4. MESEMBRYANTHEMUM AUSTRALE, *Ait.*

HAB. Bay of Islands, New Zealand (where it was also collected by Cunningham, Raoul, &c.): the specimen is destitute both of flower and fruit.

Ord. MALVACEÆ.

1. PALAVA, *Cav.*

1. Palava moschata, *Cav.*

Palava moschata, Cav. Diss. 1, p. 41, t. 11, f. 5; Lam. Ill. t. 577.
Palavia moschata, Willd. Spec. 3, p. 768; DC. Prodr. 1, p. 458.

Hab. San Lorenzo, near Callao, Peru: without flowers or fruit.

2. MALVASTRUM, *Gray.*

Malvastrum, Gray, Pl. Fendl. (Mem. Amer. Acad. 4), p. 21, & Gen. Am. Bor. Ill. 2, p. 59.

This genus is distinguished from *Malva* by the capitate stigmas: from *Sida* by the peritropous-ascending ovule and inferior radicle. The species with a manifest involucel have commonly been referred to the former, and those with a small or caducous involucel, or none at all, to the latter genus.

1. Malvastrum Peruvianum.

Malva Peruviana, Linn. Spec. ed. 1, p. 688; Jacq. Hort. Vindob. t. 156; DC. Prodr. 1, p. 435.
M. Limensis, Hook. & Arn. Bot. Misc. 3, p. 151; non Linn.?

Hab. Near Lima and Obrajillo, Peru; common.

The small flowers are noted as "blue;" but the carpels are "exasperata dentibus alternis plurimis," leaving no doubt that ours is the Linnæan plant. It was gathered also by Dombey in the same district.

2. MALVASTRUM SCABRUM.

Malva scabra, Cav. Diss. 5, p. 281, t. 138, f. 1; DC. Prodr. 1, p. 430.
M. scoparia, Jacq. Ic. Rar. t. 139, ex DC.

HAB. Obrajillo, Andes of Peru.

Differs (perhaps too slightly) from *Malvastrum scoparium* (*Malva scoparia*, L'Her., Cav.) in the more coarsely and sharply toothed leaves, which are not canescent, and in the shorter tubercles rather than awns on the back of the carpels, which moreover are muticous at the proper apex. *M. scoparium* (to which apparently belongs *Sida depressa*, Benth. Bot. Voy. Sulph. p. 69), a common plant around Lima, although not in the present collection, has a short and erect cusp at the strongly incurved apex of the carpels, as is described by Cavanilles.

3. MALVASTRUM PLUMOSUM.

Malva plumosa, Presl. Rel. Hænk. 2, p. 124; Walp. Repert. 1, p. 295.

HAB. Obrajillo, Peru. (Peru, Matthews, in herb. Hook. No. 776.)

The carpels are destitute of any awns or processes on the back; but they bear at the apex a pair of long and slender, woolly-plumose awns: they are nearly membranaceous in texture, minutely downy, not rugose nor reticulated: in dehiscence they separate into two valves.

4. MALVASTRUM SPICATUM, *Gray.*

Malvastrum spicatum, Gray, Pl. Fendl. l. c. p. 22.
Malva spicata, Linn. Spec. ed. 2, p. 967; Cav. Diss. 2, t. 20, f. 4; DC. Prodr. 1, p. 430.
M. ovata, Cav. Diss. 2, p. 81, t. 20, f. 2.
M. Timorensis, DC. l. c.; Blume, Bijdr. p. 64; Decaisne, Herb. Timor. p. 102.

HAB. Rio Janeiro, Brazil. St. Jago, Cape de Verde Islands; doubtless introduced from America.

5. MALVASTRUM TRICUSPIDATUM, *Gray.*

Malvastrum tricuspidatum, Gray, Pl. Wright. (in Smithson. Contrib. 3) 1, p. 16.
M. carpinifolium, Gray, Pl. Fendl. p. 22, excl. syn. Sida carpinifol. & planicaulis.
Malva Coromandeliana, Linn. Spec. 2, p. 687 (Pluk. Mant. t. 334, f. 2); Swartz, Obs. p. 262.
M. tricuspidata, Ait. Kew. ed. 2, 4, p. 210; DC. Prodr. 1, p. 430.
M. subhastata, Cav. Diss. 2, p. 72, t. 21, f. 3; St. Hil. Fl. Bras. Mer. 1, p. 214.
M. Americana, Cav. l. c. t. 22, f. 2, vix Linn.
M. Domingensis, Spreng. in DC. Prodr. 1, p. 431.
M. Lindheimeriana, Scheele, in Linnæa, 21, p. 470.
Sida carpinoides, DC. Prodr. 1, p. 461; Walp. Rel. Meyen. p. 306.

HAB. Rio Janeiro. Oahu, Sandwich Islands; naturalized around Honolulu. Manilla, Luzon.

An American species now widely diffused over the warmer parts of the world. It would not be proper to re-establish the Linnæan specific name of *Coromandeliana* for a species which Linnæus himself gives as only American, and which certainly is not indigenous, even if now to be found, on the Coromandel coast.

6. MALVASTRUM RHIZANTHUM, Sp. Nov.

M. acaule, glabrum; radice fusiformi tuberosa; foliis longe petiolatis rotundis subcordatis duplicato-crenatis; floribus in collo umbellato-congestis; pedunculis unifloris petiolis multo brevioribus; bracteolis involucelli eciliatis; fructu glabro; coccis muticis dorso ad margines dentibus 3–4 muricatis.

HAB. High Andes of Peru, above Baños.

A strictly *stemless* plant, *glabrous* throughout, except the inside of the calyx; the clustered foliage and numerous, crowded peduncles growing directly from the crown of the perpendicular *fusiform-tuberous root.* Petioles mostly an inch and a half long. *Leaves rotund*, or obovate-orbicular, about three-fourths of an inch in diameter, most of them *subcordate*, some of them scarcely so, 3–7-plinerved from near the base, veiny, crenate-toothed or *doubly crenate*, with the coarser incisions few, and the obtuse teeth at first bristle-pointed. *Peduncles one-flowered, umbellate-crowded*, even in fruit *shorter than the* petioles. Bractlets of the involucel 3, linear, glabrous, not ciliate, shorter than the calyx. Calyx 3 lines in length, five-cleft to the middle; the lobes ovate, rather obtuse, pilose with soft hairs on the inside, but externally glabrous. Corolla nearly twice the length of the calyx, pale purple? (the colour not recorded). Stamineal column simple, antheriferous only at the summit. Styles 12 or 13, united below the middle: stigmas capitate. Ovary glabrous; the cells uniovulate. Ovule peritropous-ascending; the micropyle inferior. *Fruit glabrous*, depressed: *carpels* rather membranaceous, indehiscent, reniform, with the compressed summit more extended than the base, *muticous*, that is, wholly awnless and pointless both at the apex and dorsally, but the angles down the back *muricate* with 3 or 4 soft and long teeth. Seed reniform. Radicle inferior.

In Sir William Hooker's herbarium are specimens of this plant gathered at Cerro Pasco by Matthews, along with an allied but pilose species, which is perhaps the same as the following.

7. Malvastrum Richii, Sp. Nov.

M. acaule, pilis stellatis hirsutum; radice napiformi; foliis rotundatis subcordatis duplicato-dentatis vel incisis; floribus in collo umbellato-congestis; pedunculis unifloris petiolis brevioribus; bracteolis involucelli 2–3 exiguis.

Hab. Near Obrajillo or Baños, Andes of Peru.

A very small, depressed, strictly *stemless* plant, *hirsute* all over with rather soft, fulvous, *stellate hairs;* the clustered foliage and the peduncles growing directly from the crown of the thick and fleshy, perennial, *turnip-shaped root*. Petioles half an inch to an inch long. *Leaves roundish*, some of them *slightly cordate* at the base, half an inch in diameter, coarsely *doubly-toothed or incised*, strongly five-ribbed, thickly hirsute both sides. *Peduncles umbellate-crowded*, 3 or 4 lines long, simple, *one-flowered*, naked, or with one or two bractlets, like those of the involucel, which are 2 or 3 in number, linear-setaceous, glabrous or stellately ciliate, half the length of the calyx. Calyx hirsute externally, nearly glabrous within, five-cleft nearly to the middle, 2 to 3 lines long. Corolla white or purplish, a little longer than the calyx, hairy at the base externally. Fruit not seen.

Allied to *M. rhizanthum* and *M. acaule;* but smaller in all its parts, and hairy.*

8. Malvastrum ulophyllum, Sp. Nov.

M. nanum, e radice fusiformi multiceps, acaule; foliis confertis, petiolo dilatato stipulisque adnatis nudis, lamina reniformi-rotundata flabel-

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* Malvastrum acaule (*Malva acaulis*, Cav. Diss. 2, t. 35), of which there are specimens in the Hookerian herbarium, from Matthews (Huamantanga) and M'Lean, has hairy petioles, &c., sharply toothed and incised leaves, longer and usually more than one-flowered peduncles, and larger flowers than *M. rhizanthum*. I have not seen the fruit, which, however, is said to be tomentose.

Malvastrum parnassiæfolium (*Sida parnassiæfolia*, Hook Ic. Pl. t. 385), from the Quitensian Andes, has larger flowers than *M. rhizanthum*, on peduncles as long as the obsoletely toothed leaves; the calyx is hirsute, and the petioles are hispid-ciliate.

Malvastrum Purdiæi (Sp. Nov.): *acaule, hirsutum; radice fusiformi maxima; foliis cordato-rotundis sublobatis crenato-dentatis glabratis; pedunculis in collo umbellato-confertis petiolis brevioribus apice capitato-trifloris; bracteolis involucelli 2–3 lanceolatis; fructu tomentoso depresso, coccis omnino muticis.*—Andes of New Granada, Mr. Purdie. A species nearly allied to *M. acaule*, and with flowers about the same size: but the peduncles (which are less than an inch long, even in fruit) are terminated by a capitate cluster of about three flowers, which are not pedicellate. The bractlets of the involucel are glabrous, or nearly so; but the calyx is hirsute externally. Corolla purple. Carpels about 15, almost orbicular, tomentose on the back, not muricate nor roughened.

Malvastrum humile (*Malva humilis*, Gillies, in Hook. Bot. Misc. 3, p. 150), as formerly mentioned in Plantæ Fendlerianæ, p. 21, belongs to the section of which the North American *M. coccineum* is the type.

Malva Belloa, Gay, Fl. Chil. 1, p. 304, t. 7, is a true *Malvastrum;* and so probably are all the other really indigenous Chilian species referred to *Malva* in the same work, except *Malva sulphurea* of Gillies, which is a *Sida*.

Sida pygmæa, Remy, in Ann. Sci. Nat. ser. 3, 8, p. 238, from the Bolivian Andes, is probably a *Malvastrum*.

lato-multilobata supra cano-tomentosa subtus glabella, lobis 3–7-lobulatis confertissimis lobulisque obovatis involutis quasi crispis; floribus solitariis petiolo insidentibus sessilibus; calyce haud involucellato corollam subæquante; coccis 8 subulato-rostratis hirto-villosissimis.

Hab. Alpine region of the Cordilleras of Peru, at Alpamarca, near the snow-line.

Root perpendicular, *fusiform*, rather stout, 5 or 6 inches in length; the crown divided into a number of extremely short leafy caudexes; the whole plant above-ground forming a depressed and rather close tuft, an inch or two in diameter, and barely an inch high. Ascending *stems none*. *Leaves crowded* on the caudexes, but not imbricated, spreading. *Petioles* about 3 lines long; the lower half or more *dilated* and squamaceous, being winged by the large *adnate stipules:* these are rather scarious, nearly glabrous, *naked* (not ciliate); their free portions broadly linear, 3 lines long, about twice the length of the free but flattened summit of the petiole. Lamina of the *leaf rotund and slightly reniform*, 7–9-nerved from the base, *flabellately* 7–11-*lobed* to the middle, thickish in texture, *canescent-tomentose above*, nearly glabrous underneath, about 3 lines in length and 4 in width; the *lobes obovate*, again *lobulate* (the lobulets of the lateral segments 2 or 3, or the larger middle ones 5–7), with involute margins, very *much crowded*, and overlying each other, giving the leaf a remarkably *crisped* appearance. *Flower borne on the petiole* about its middle, *sessile*, small, destitute of an involucel. Calyx campanulate, minutely tomentose, five-cleft to the middle, 3 lines in length; the lobes triangular-ovate, obtuse. *Corolla scarcely exceeding the calyx;* the colour unknown. Stamens and styles (8) as in *Malvastrum*. Capsule about the length of the calyx; the *carpels* 8, *very villous* with rather hirsute hairs, thin, semiovate, pointed with a *subulate beak*, which is considerably shorter than the cell, two-valved from the apex. Ovule ascending; the micropyle inferior. Seed reniform. Embryo arcuate: the radicle centripetal-inferior.

This species and the succeeding ones, as well as *M. Pichinchense*, and their allies (natives of the Quitensian, Peruvian, and Chilian Andes), all bear the flower on the dilated petiole, between the stipules, in the manner indicated by Cavanilles in his *Sida Phyllanthos*. They will constitute, therefore, a well-marked section of the genus (the

MALVASTRA PHYLLANTHOPHORA).* The character has been noticed by Meyen in two species from the southern part of Peru; but it seems to have escaped observation in the most conspicuous of all, namely

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* Besides those in the collection of the Exploring Expedition, above enumerated, the following species belong to this section:—

MALVASTRUM PHYLLANTHOS. *Sida Phyllanthos*, Cav. Diss. 5, p. 276, t. 127, f. 4; H. B. K. Nov. Gen. & Spec. 5, p. 264.—The hirsute carpels are pointed with a subulate beak, which is shorter than the cell. The radicle, although rather abruptly inflexed, is centripetal-inferior.—*Sida Borussica* of Meyen, is either a variety of this species, as Walpers suggests, or a closely allied species.

M. PICHINCHENSE. *Sida Pichinchensis*, Humb. & Bonpl. Pl. Æq. 2, p. 115, t. 116. —The ripe fruit (in specimens collected by Hartweg) consists of about 12 two-valved carpels, which are hirsute, membranaceous, tapering into an erect, lanceolate-subulate, and soon bifid beak, which is longer than the cell. Embryo rather closely coiled, but not conduplicate; the radicle centripetal-inferior. The character of the leaves is correctly indicated by Bentham (in Plantæ Hartwegianæ). The flower is borne on the winged part of the petiole between the stipules, just as in the preceding species.

MALVASTRUM MACLEANI (Sp. Nov.): *nanum, multiceps e caudice brevissimo crasso, acaule; foliis confertis biternatilobatis seu tripartitis segmentis 2–3-fidis, lobis obovatis oblongisve obtusis supra (cum calyce) albo-villosis subtus villosulis; flore in petiolo inferne stipulis adnatis alato sessili magno.*—High Andes of Peru, Mr. M'Lean (in herb. Hook.).—The plant is only about an inch high, exclusive of the flower: the leaves forming a dense tuft on the thickened caudex. Petioles 2 to 4 lines long, flattened below, and with the stipules adnate to the middle, naked. The leaves themselves are villous with long and soft white hairs, more densely so on the upper surface, 3 or 4 lines long and 5 or 6 in width, somewhat reniform in circumscription, three-parted, or sometimes flabellately 4–5-parted, and with the divisions deeply 2–3-cleft or parted, obovate or cuneiform, much crowded; the segments either entire or again 2–3-lobed; the ultimate lobes narrowly oblong, or obovate, obtuse. The flower is very large for the size of the plant; the petals (apparently pale purple) being an inch and a quarter in length. Calyx villous, like the leaves. Stamens, styles, &c., as in the genus. Fruit not seen.

MALVASTRUM PEDICULARIÆFOLIUM. *Sida pediculariafolia*, Meyen, Reise, 1, p. 460, ex Walp. Rel. Meyen. p. 308.—A species evidently related to the foregoing, but unknown to me.

MALVASTRUM COMPACTUM. *Sida compacta*, Gay, Fl. Chil. 1, p. 329, is a well-marked Phyllanthophorous species.

MALVASTRUM ANTHEMIDIFOLIUM. *Sida anthemidifolia*, Remy, in Ann. Sci. Nat. ser. 3, 6, p. 356.

There are other undescribed Chilian and Peruvian species in the Hookerian herbarium.

M. Pichinchense. These plants have all the floral characters of *Malvastrum;* the solitary ovules being ascending; the embryo arcuate, or in some species rather arcuate-inflexed, almost as in *Sida*, but the radicle is always centripetal-inferior. The flowers are not involucellate nor bracteate.

9. MALVASTRUM ARETIOIDES, Sp. Nov.

M. nanum, densissime cæspitosum, acaule; foliis imbricatis parvis; petiolo stipulis fere ad apicem adnatis alato squamaceo hispido-ciliato; limbo pedato 5–7-partito stipulas vix superante, segmentis confertis obovatis supra concavis cano-tomentosis subtus glaberrimis; floribus solitariis basi petiolo adnatis sessilibus; calyce exinvolucellato hirsuto corolla dimidio breviore; ovario tomentoso 7–8-loculari; coccis 8 subulato-rostratis?

HAB. Alpine region of the Cordilleras of Peru, at Casa Cancha.

A single small specimen, in flower, is all that I have detected in the collection. It is scarcely above half an inch high, looking as to the vegetation somewhat like *Donatia*, or the tufts of a dense and dwarf Saxifrage or *Aretia*, and it evidently grows in the same cæspitose manner. *Leaves densely imbricated* on the short caudexes; the *dilated and scale-like petioles* 2 or 3 lines long, *winged* with the adnate portion of the stipules almost to the summit, and *ciliate* with strong *hispid* hairs, which also sparingly beset the lower surface: the free portion of the stipules also scarious and hispid-ciliate, *almost as long as the blade of the leaf;* the naked portion of the petiole very short, sometimes almost wanting. Blade of the leaf only a line or a line and a half long, rather coriaceous, *glabrous underneath, minutely canescent-tomentose above,* palmately five-parted, or more commonly *pedately-parted* into three principal divisions, of which the lateral are three-cleft and the middle one entire; the *lobes obovate, entire, concave* (the margins involute), very much crowded. Flower sessile, *adnate to the base of the dilated petiole.* Involucel none. *Calyx hirsute,* not involucellate, three lines long, five-cleft to the middle, the lobes oblong-lanceolate. *Corolla twice the length of the calyx,* "white with a bluish base," if I rightly identify the plant with one mentioned in Dr. Pickering's notes:

the petals cuneiform, with the apex truncate and slightly retuse. Stamineal column and anthers as in the genus. Styles 8, united below: stigmas capitellate. *Ovary tomentose;* the cells each containing a single ascending ovule. Mature fruit not seen: the young *carpels subulate-beaked* more or less.

10. MALVASTRUM PINNATUM.

M. nanum, subacaule, cæspitosum; caudice multicipite crasso; foliis confertis pinnatipartitis supra cano-tomentosis subtus glabratis, segmentis linearibus integerrimis; floribus solitariis in medio petiolo alato hispido-ciliato sessilibus; petalis oblongo-obovatis; ovario circiter 12-loculari hirsutissimo.

Sida pinnata, Cav. Ic. 5, p. 13, t. 422, f. 1; DC. Prodr. 1, p. 466.

HAB. Alpine region of the Cordilleras of Peru, between Casa Cancha and Culnai, &c.; common.

Plant growing in depressed and apparently dense and broad *cæspitose* tufts, from a *stout and thick branching caudex*, only an inch high. Leaves crowded and thickly covering the branches of the caudex, an inch or more in length, including the dilated and spathaceous petiole; which is 5 or 6 lines long, and combined (as in the preceding species) with the adnate stipules, sparsely pilose externally, the margin ciliate with hispid hairs. The stipules are adnate up to the base of the lamina; the free portion lanceolate-subulate, hispid-ciliate. Lamina of the *leaf pinnately parted* into 7 to 9 *linear and entire segments*, of unequal length, nearly glabrous underneath, *above canescent* with a white tomentum, the margins involute; the segments tipped with one or more hair-like bristles. *Flower* pretty large and showy, *sessile on the middle of the dilated petiole*, in the manner of *M. Phyllanthos*, &c., but considerably below the point where the stipules become free. Calyx campanulate, tomentose-pubescent, five-cleft to the middle; the lobes triangular, acute. Corolla (purplish?) nearly thrice the length of the calyx; the *petals oblong-obovate*, 10 lines long. Stamens, styles, &c., as in the genus. *Ovary very hirsute, about twelve-celled*, with a solitary ascending ovule in each cell. Fruit not seen.

The specimens accord so well with the figure and description of the *Sida pinnata* of Cavanilles (which, however, was gathered on Chimborazo), that they may confidently be referred to that species. True, the flowers of *S. pinnata* are said to be sessile in the axils; but the peculiarity in the insertion might readily be overlooked in this, as it certainly has been in several other species. The leaves, also, are said to be tomentose-canescent *underneath*, which is a natural oversight, since the lower surface, if either, is the downy one in most plants. But all the *Phyllanthophorous Malvastra* have the *upper* surface more downy than the lower.

11. Malvastrum stenopetalum, Sp. Nov.

M. nanum, cæspitosum, acaule; foliis pinnatipartitis supra niveo-tomentosis subtus glabris, segmentis tri–quinque-jugis confertis profunde trifidis, lobis linearibus integerrimis vel jugi infimi bi–tri-lobulatis; petiolo superne exalato basim versus florem sessilem inter stipulas adnatas gerente; petalis angusto-spathulatis puniceis; ovario circ. 12-*loculari hirsuto.*

Hab. Alpine Cordilleras of Peru, near Casa Cancha. (Also gathered by Mr. M'Lean.)

Plant growing in close, depressed tufts, half an inch to an inch high, smaller in all its parts than the foregoing species; the branches of the caudex not so stout. *Leaves* crowded, 6 to 8 lines long (including the petiole) *glabrous beneath, white-tomentose above* with a very fine and close tomentum, *pinnately parted* into 3 to 5 pairs of *approximated segments*, which are again deeply *trifid;* the *lobes linear* or narrowly oblong, *entire, or* those of the lowest and largest pair 2–3-*lobulate;* the margin involute. *Petiole* wingless and naked above; the scarious *stipules adnate towards the base* only, scarcely if at all ciliate. *Flower sessile on the petiole next its base*, a little below the free portion of the stipules. Involucel none. Calyx campanulate, five-cleft to below the middle, puberulent externally, the tube marked with five brown spots within next the base; lobes triangular-ovate, acute, canescent-tomentose inside. *Petals deep red*, greenish or yellowish at the base, at first *oblong-spatulate* and 4 or 5 lines long, of a rather firm texture, not convolute together after anthesis but remaining separate and persistent, becoming *narrowly spatulate*, and attaining the length of 6 or 8 lines. Stamineal column antheriferous for a considerable portion of its upper part; the anthers apparently red or reddish. Styles 12, red at the summit, which is clavate-thickened: stigmas capitate, small. *Ovary hirsute, twelve-celled;* the ovules, &c., as in the preceding species. Fruit not seen.

This well-marked species, although not yet met with in the collection, is so well indicated in Dr. Pickering's notes as to enable me to identify it with specimens in Sir William Hooker's herbarium, gathered in the same district by Mr. M'Lean, from which it is here described. The corolla appears to have been blood-red.

12. MALVASTRUM CAVANILLESII.

M. nanum, subacaule; caudice multicipite crasso; foliis confertis pinnatipartitis utrinque tomentosis, segmentis 5–7 *obovatis trilobatis; floribus solitariis basi petioli dilatato sessilibus; petalis obovatis; ovario* 7–10-*loculari hirsuto.*

Sida acaulis, Cav. Ic. 5, p. 13, t. 422, f. 2; DC. Prodr. 1, p. 466.

HAB. High Cordilleras of Peru, near Casa Cancha, &c. (Also gathered by Mr. M'Lean.)

This is another of these depressed and tufted alpine species, not over an inch high, with branching caudexes almost as thick as those of *M. pinnatum*. The leaves are smaller than in that species, *tomentose on both sides* with a cinereous or fulvous pubescence; the very small *segments* (barely a line in length) *obovate and three-lobed;* the petioles less winged. The flowers also are small, and sessile at the very base, if not truly in the axils, of the leaves; the *obovate petals* only 3 or 4 lines in length. The styles and cells of the ovary are 7, according to Cavanilles. In our plant they are 9 or 10; and the ovary is hirsute, as in all these species. I have not seen the fruit. Our specimens closely resemble the figure given by Cavanilles; but the corolla does not appear to have been yellow.

3. SIDA, *Linn.*, *Kunth.*

1. Sida sulphurea, *Gray.*

Sida (Pseudo-Malvastrum) sulphurea, Gray, Pl. Fendl. in Mem. Amer. Acad. 3, p. 23. *Malva sulphurea*, Gillies, in Hook. Bot. Misc. 3, p. 149; Gay, Fl. Chil. 1, p. 295.

Hab. Rio Negro, North Patagonia; very common.

The specimens of this prostrate, silvery-lepidote species wholly accord with those of Gillies from Mendoza, and of C. Gay from the interior of Chili. There are one or two setaceous or subulate bractlets, either alternate, near the apex of the pedicel, or subtending the base of the calyx, like an involucel. The ovule is resupinate-suspended, and the embryo conduplicate, with the radicle superior: it is therefore a true Sida. The colour of the flower in the recent plant is not recorded: it is probably sulphur-yellow, changing to dull red and greenish in drying, as in the Chilian plant. The species must be closely allied to *Malva leprosa* of Ortega, which is unknown to me, and which is said to come from Cuba.

2. Sida linifolia, *Cav.*

Sida linifolia, Cav. Diss. 1, p. 14, t. 2, fig. 1; DC. Prodr. 1, p. 459; St. Hil. Fl. Bras. Mer. 1, p. 180.

Hab. Around Rio Janeiro, Brazil; where it is very abundant. Ovolau, Feejee Islands. (Not mentioned in Dr. Pickering's notes; so that we know not if it was thought to be indigenous. It is singular that an American species, not very widely diffused, should have been conveyed to this little-visited group of islands.)

3. Sida spinosa, *Linn.*

Hab. St. Jago, Cape de Verde Islands. Callao, Peru. Tongatabu.

The specimens belong to the variety with broader leaves, characterized by Webb, in his Spicilegia Gorgonea. That from the coast of Peru has more downy leaves, obtuse, and obtusely toothed; and well accords with *S. alba* of Linnæus, as described by Wight and Arnott.

4. SIDA RHOMBIFOLIA, *Linn.*

Var. α. *carpellis apice aristatis, vel subulato-rostratis.*

Var. β. *carpellis apice mucronulatis vel omnino muticis.*

S. rhomboidea, Roxb. Hort. Bengh. p. 50; DC. Prodr. 1, p. 462; Wight & Arn. Prodr. Ind. Or. p. 58; Decaisne, Herb. Timor, p. 105.
S. Hondensis, H. B. K. Nov. Gen. & Spec. 5, p. 260; DC. l. c.
S. salicifolia, Forst. in herb. Mus. Par. ex Guillemin.

HAB. Samoan and Feejee Islands; common: the var. α. with distinctly *awned carpels.*—Samoan Islands, Tahiti, Luzon, Singapore, Rio Janeiro, and Callao, Peru; the var. β. with *pointless or barely mucronate carpels.*

This widely diffused species varies much in the shape and size of the leaves, as well as in the smoothness or the degree of tomentose pubescence of their lower surface; and the carpels are either long-awned, awn-pointed, mucronate-beaked, or entirely blunt, without apparently any means of drawing a line of distinction between the different forms, as Mr. Bentham remarks. *S. canescens* and *S. alba*, Cav., *S. Canariensis*, Willd., belong to the species; and perhaps even *S. retusa* and *S. Philippica*, make an extreme form of it.

5. SIDA RETUSA, *Linn.*

Var. *vix suffruticosa; foliis ovalibus vel obovato-oblongis parvis; pedunculis folio longioribus.*

Sida microphylla, Benth. in Hook. Lond. Jour. Bot. 2, p. 211, non Cav.?

HAB. Samoan and Feejee Islands, in waste places.

A small, depressed or procumbent species, with the stems scarcely woody at the base; the leaves only 2 to 4 lines long, oval, elliptical, or obovate-oblong, scarcely retuse; the peduncles nearly an inch long; the carpels, &c., as in *S. rhombifolia*. It may be the little-known *S. microphylla;* but the peduncles are much longer than the leaf.

6. SIDA ACUTA, *Burm., DC.*

HAB. Tahiti, Society Islands: doubtless introduced. Shores of Laguna, Baños, Luzon.

To this belongs *Sida stipulata*, Cav., *S. Balbisiana*, DC., and *S. glabra* of Nuttall. It has not before been recorded from the Society Islands.

7. SIDA CARPINIFOLIA, *Linn. f.*

Sida carpinifolia, Linn. f. Suppl. p. 307; Cav. Diss. 5, p. 274, t. 134, f. 1; DC. Prodr. 1, p. 461; St. Hil. Fl. Bras. 1, p. 184.
S. planicaulis, Cav. Diss. 1, p. 24, t. 3, f. 11.
S. bracteolata, DC. Prodr. 1, p. 460.
S. spireæfolia, Willd.? Link. Enum. 2, p. 203? DC. Prodr. 1, p. 472?

HAB. Around Rio Janeiro, Brazil; very common.

It is doubtful whether this plant grows at all in Madeira, nor have I yet seen any specimens from the Canary Islands: but *Malvastrum tricuspidatum* is naturalized in both places. The younger Linnæus described his *Sida carpinifolia*, from a specimen gathered by Masson "in the garden of the Franciscan monastery, Madeira." The seeds doubtless were derived from South America, probably from Brazil, where the species is indigenous and very abundant.

8. SIDA PANICULATA, *Linn.*

Sida floribunda, H. B. K. Nov. Gen. & Spec. 5, p. 258, t. 473; DC. l. c. p. 465.

HAB. Rio Janeiro, Brazil. Around Callao and Lima, Peru; very abundant.

The carpels are barely mucronate-pointed; and they are represented quite as much so in the figure of *Sida floribunda*, H. B. K., which must be added to the synonymes adduced by DeCandolle. *Sida venusta*, Walp. in Rel. Meyen. (excl. syn. Schlecht.?) must also be the same plant, as it is said to grow around Lima; and a Peruvian specimen of *S. paniculata*, received from Meyen under the name of *Sida atrosanguinea*, exists in the Hookerian herbarium.

9. SIDA DOMBEYANA, *DC.*

Sida Dombeyana, DC. Prodr. 1, p. 463; Hook. Bot. Misc. 2, p. 209 t. 89.

HAB. Lima, Peru: common in the bed of the river. Also near Obrajillo.

This will probably have to be joined to the East Indian *Sida humilis*.

10. SIDA JAVENSIS, *Cav.*

Sida Javensis, Cav. Diss. 1, p. 10, t. 1, f. 5; DC. Prodr. 1, p. 465.
S. veronicæfolia, Lam. Dict. ex Zollinger, coll.

HAB. Near Manilla, Luzon.

11. SIDA CORDIFOLIA, *Linn.*

HAB. St. Jago, Cape de Verde Islands. Near Rio Janeiro, Brazil.

To the synonymes adduced by Webb (Spicilegia Gorgonea) to this species, viz.: *S. herbacea*, Cav., *S. rotundifolia*, Cav., *S. althæifolia*, Swartz, and *S. Africana*, Beauv., that of *Sida multiflora*, Cav., should doubtless be added. The plant is very widely distributed through the tropics both of the Old and of the New World. From Dr. Pickering's notes I am led to infer that it was seen around Lima (where it was also gathered by Matthews); but it is not found in the collection.

12. Sida fallax, *Walp.*

S. tomentosa, frutescens; caule ramoso; foliis cordato-ovatis seu ovato-rotundis canescenti-velutinis recte penninerviis creberrime serrato-crenatis; pedunculis axillaribus unifloris folia subæquantibus vel superantibus; calycis lobis ovatis acutis; coccis 6–9 (12 ex Walp.) *muticis glabellis apice obtuso rima brevi dehiscentibus.*

Sida rotundifolia, Hook. & Arn. Bot. Beech. Voy. p. 79, non Cav.

Var. α. *foliis (sæpe parvulis) utrinque velutino-tomentosis subplicatis.*

Sida fallax, Walp. Rel. Meyen. p. 306.
Anoda ovata, Meyen. Riese, 2, p. 139.

Var. β. *foliis supra minus velutinis aut subglabratis obtusis acutis vel subacuminatis.*

Hab. Oahu, Sandwich Islands; on Diamond Hill, &c., near Honolulu (var. α.) Also gathered on Malden Island by Macrae.—The var. β. also from Oahu; and the Coral Islands: namely, Wake's Island, Gardner's Island, and Birney's Island. Also gathered on Oahu by Lay and Collie, Meyen, Nuttall, Gaudichaud, &c.

Stem more or less *shrubby*, at least at the base, erect, branching, apparently 2 or 3 feet high; the branches, like the rest of the plant, *tomentose* with a fine and close velvety pubescence. Leaves variable in form, ovate, *roundish-ovate* or oblong-ovate, with a rounded and usually *cordate* base (the sinus small and narrow), either very obtuse, acute, or somewhat acuminate, equally *velvety-tomentose* and canescent on both sides, or, in var. β. less downy and greener, or even almost glabrate, above, *closely crenate-toothed* with rather fine and unequal obtuse teeth, 6 to 18 and even 24 lines long, and on petioles of half or a third the length of the blade, rather strongly *pinnately-veined* with 8 to 11 pairs of straight veins on each side: in var. α. these are so strong that the leaf appears somewhat plicate. Stipules setaceous. Peduncles *axillary*, solitary, or two or three from the same axil, filiform, equalling or the upper exceeding the leaves in length, articulated towards the apex, *one-flowered*. Calyx tomentose like the leaves, five-cleft nearly to the middle, the lobes *ovate* or triangular, *acute* or somewhat acuminate. Petals yellow, obovate, half an inch in length, about a third longer than the calyx. Ovary minutely pubescent. Fruit shorter than the tube of the calyx, subglobose, *nearly glabrous*; the carpels 6 to 9, or 12 (according to Walpers, and Dr. Pickering's notes), at length falling away separately, a line and a half in length, slightly wrinkled or reticulated, *obtuse* and *pointless*, dehiscent by a short transverse chink at the narrowed apex. Seed and embryo of the genus.

A variable species, of which we have specimens well agreeing with Walpers' character (except that the leaves are almost always a little cordate, and I have not noticed so many as 12 carpels), and others which differ widely from it in the size of the leaves, &c. The Sandwich Island plant cannot be separated from that of the Coral Islands. I am not aware that the latter has been anywhere described.[*]

13. SIDA DIELLII, Sp. Nov.

S. cano-tomentosa; caule basi suffrutescente? ramoso; foliis oblongo-ovatis subacutis basi rotundatis seu leviter subcordatis crenato-serratis velutinis subtus incanis recte penninerviis; pedunculis axillaribus 1–2-*floris folia subæquantibus; calycis lobis ovatis obtusiusculis; coccis* 8 *puberulis apice apiculato-bidentatis.*

HAB. Hawaii, Sandwich Islands; on the coast southwest of the crater Lua Pele. (Port Byron, Rev. J. Diell.)

Plant apparently 2 or 3 feet high, with slender and spreading branches (the base probably a little woody), softly *tomentose-canescent* throughout; the branchlets and peduncles also beset with some fine villous hairs. Leaves (the lower cauline ones wanting) 6 to 14 lines long, on rather long petioles, *oblong-ovate*, *acutish* or obtuse, *rounded* or very *slightly cordate* at the base, finely *crenate-toothed*, *velvety* both sides, the lower surface *whitened* and conspicuously pinnately veined, the straight veins 6 or 7 on each side of the midrib. Stipules setaceous. Peduncles *axillary*, solitary or in pairs, *one-flowered* or sometimes 2-*flowered*, 6 to 10 lines long, articulated near the apex. Flowers yellow, nearly as large as in the foregoing species. Calyx tomentose, five-cleft to the middle; the lobes ovate and *obtuse* or obtusish. Ovary canescently pubescent. Fruit shorter than the tube of the calyx, *puberulent;* the carpels usually 8, a line and a half long, somewhat wrinkled, bidentate with two short teeth at the apex, opening between the teeth. Seed and embryo as in the genus.

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[*] What is "*Sida maura*, "Link, Enum. 2, p. 204," Endl. Bemerk. Fl. Sudseeins. in Ann. Wien. Mus. 1, p. 182? "Ins. Mariannæ, *Cham.*" There is no species under this name in the work referred to.

This species appears to be sufficiently distinct from both the preceding and the following. I have dedicated it to the memory of its discoverer, the late Reverend John Diell, formerly Chaplain at Honolulu. A specimen given by him to M. Gaudichaud, is preserved in the herbarium of the Garden of Plants at Paris.

14. SIDA SERTUM, *Nutt. ined.*

S. subcanescens; caule frutescente ramoso; ramis confertis; foliis ovalibus crenulatis utrinque rotundatis basi sæpius subcordatis longius petiolatis subtus canescentibus supra glabratis; pedunculis axillaribus unifloris folia æquantibus; calycis lobis obtusissimis; coccis 8–9 *glabellis breviter birostratis.*

Sida Sertum, Nutt. ined. in Herb. Hook.
S. rotundifolia, Hook. & Arn. Bot. Beech. Voy. p. 79, var.

HAB. Oahu, Sandwich Islands; on mountains behind Honolulu. (Also gathered by Lay and Collie, Nuttall, Diell, &c.)

Apparently a low *suffruticose* species, with crowded and bushy branches; which, with the petioles, peduncles, calyx, &c., are *barely canescent* with a minute pubescence. Leaves an inch to an inch and a half long, *oval*, or subovate-oblong, very obtuse and *rounded* at both ends, usually more or less *subcordate* at the base, finely *crenulate*, pinnately veined, but less conspicuously so than in the foregoing species, *canescent underneath* with a minute and very close pubescence, glabrous or *glabrate* above; the petioles two-thirds the length of the blade. Stipules setaceous. Peduncles *axillary* and usually solitary, capillary, one to two inches long, one-flowered. Calyx five-cleft nearly to the middle; the lobes broadly ovate, *very obtuse*. Petals yellow, nearly twice the length of the calyx, 5 or 6 lines long. Carpels about 8 in number, nearly glabrous, abruptly tipped with two *subulate-aristiform beaks*, which are shorter than the cell, and minutely hairy.

I am not certain whether Mr. Nuttall's specimens in the Hookerian herbarium under this name do not include some of *Sida fallax*: Hooker and Arnott have considered them all as forms of one polymorphous species. *S. Meyeniana* is distinguished by the sharply toothed leaves of the same colour both sides, the sharply acuminate sepals, and the long-beaked carpels.

15. SIDA MEYENIANA, *Walp.*

Sida Meyeniana, Walp. Rel. Meyen. p. 307, & Repert. 1, p. 94.
S. ulmifolia, Hook. & Arn. Bot. Beech. Voy. p. 79, non Cav.

HAB. Oahu, near Honolulu, Sandwich Islands. (Also gathered by Lay & Collie, Macrae, Meyen, Gaudichaud, Barclay, &c.)

A suffruticose species, glabrous, or the branchlets and leaves when young furfuraceous or scurfy with a sparse stellate pubescence. Stipules setaceous, minutely hairy. Leaves membranaceous, green and of nearly the same hue both sides, ovate, oblong-ovate, or rotund-ovate, acute or acuminate, rarely obtuse, rounded or slightly subcordate at the base, sharply serrate, one to two inches long, or those of the branchlets smaller. Peduncles axillary, usually solitary, shorter than the leaves, or nearly equalling them in length. Calyx glabrous; the lobes triangular-ovate, sharply acuminate, about half the length of the oblique and yellow petals. Carpels 5 to 9, nearly glabrous, two-beaked; the beaks subulate-awned, pubescent, as long as the cell or longer.

Walpers compares this well-marked species with *Sida rhombifolia*, to which it bears no particular resemblance.

16. Sida fibulifera, *Lindl.*

Sida fibulifera, Lindl. in Mitch. Exped. Austr. ex Ann. Sci. Nat. ser. 2, 15, p. 58.

Hab. Hunter's River, New South Wales.

17. Sida corrugata, *Lindl. l. c.*

Hab. Hunter's River and Puen Buen, New South Wales.

4. CRISTARIA, *Cav.*

1. Cristaria ecristata, Sp. Nov.

C. glabra; caule erecto paniculato; foliis caulinis 1–2-*ternatisectis laciniatis hirtellis, ramealibus trisectis, segmentis linearibus; coccis disco clypeato subintegerrimo accretis apice exalatis etiam vix appendiculatis.*

Hab. Rio Negro, North Patagonia; in sandy soil.

Root annual or biennial. *Stem erect*, 2 or 3 feet high, much branched from the base, *paniculate, glabrous*, as is the whole plant except the lower leaves. Cauline leaves *trisected*, and commonly with lateral segments two-parted, or the larger *biternately divided;* the lobes *laciniate*, three-cleft, or entire, and as well as the segments narrowly linear, sparsely beset, as is the petiole, with small and spreading *hispid*-stellate hairs. The leaves of the branches and branchlets are for the most part glabrous, simply *three-divided*, and the filiform-linear segments entire; the uppermost reduced to simple filiform or subulate bracts, subtending the loosely racemose-paniculate pedicels. The latter are an inch or less in length, and obscurely articulated near the apex, one-flowered. Flowers small, 2 or 3 lines long. Calyx naked, glabrous, deeply five-cleft; the lobes ovate and obtuse. Corolla twice the length of the calyx, apparently pale purple. Stamens, style, &c.,

as in the genus. Capsule conoidal, with a somewhat truncate and umbilicate apex, about 3 lines high and 3 lines broad at the base, where it is girt by a saucer-shaped, or at length flat and *shield-shaped, membranaceous disk* (larger than the calyx), to which the carpels are adherent, and from which they tardily separate at maturity. The scarious circular disk, which thus persists after the carpels have fallen, is *entire*, or very obscurely crenulate, often margined with 12 to 16 short setaceous processes, which are a portion of a dorsal nerve of each carpel, torn away at the separation: in the centre it bears the columnar persistent axis, which is moderately dilated and umbilicate at the apex. Carpels 12 to 16, separable, and at length falling away entire, flatly compressed, broadly semiovate (the straight side external), membranaceous in texture; the sides reticulated, acutely two-margined all round; the ventral edge bilamellar and scarious; the back moderately sulcate; the *apex wingless*, barely pointed, rather than appendaged, with two very small and obtuse flat processes or teeth: the dehiscence is from the apex between the teeth, extending downward first along the ventral, then along the dorsal suture, at length two-valved. Seed resupinate-suspended, triangular-obovate, compressed, conformed to the cell, which it fills. Radicle superior, straight: cotyledons incumbent and folded.

The crest, or pair of apical wings, from which the genus *Cristaria* takes its name, varies greatly in size, compared with the body of the carpel, in different species. In the present plant it is reduced to a minimum, or is, in fact, obsolete. Yet I do not hesitate to refer it to this genus, with which it otherwise accords in structure, and especially in the remarkable scarious disk.

5. GAYA, *H. B. K.*

1. GAYA SUBTRILOBA, *H. B. K.*

Gaya subtriloba, H. B. K. Nov. Gen. & Spec. 5, p. 270, t. 476.

HAB. Obrajillo, Peru.

Our specimen, a miserable one, accords well with No. 3236 of Matthews, collected at Chachapoyas, and likewise with the character and figure given by Kunth.

6. ABUTILON, *Gærtn.*

1. Abutilon glaucum, *Webb.*

Abutilon glaucum, Webb, Spicil. Gorg. in Hook. Niger Flora, p. 109.
Sida glauca, Cav. Ic. 1, p. 8, t. 11; DC. Prodr. 1, p. 471.

Hab. St. Jago, Cape de Verde Islands.

The synonymy and geographical distribution of this species are fully elaborated by Mr. Webb, in the work above cited.

2. Abutilon Indicum, *Don.*

Hab. Luzon, near Manilla and Baños: common in waste places.

3. Abutilon carneum, *St. Hil.*

Abutilon carneum, St. Hil. Fl. Bras. Mer. 1, p. 205.

Hab. In the vicinity of Rio Janeiro, Brazil.

4. Abutilon rufinerve, *St. Hil.*

Abutilon rufinerve, St. Hil. Fl. Bras. Mer. 1, p. 205, t. 42.

Hab. In the vicinity of Rio Janeiro, Brazil. (In fruit only.)

5. Abutilon esculentum, *St. Hil. l. c.?*

Hab. Near Rio Janeiro, Brazil. (In fruit only.)

6. Abutilon mollissimum, *Don.*

Sida mollissima, Cav. Diss. 2, p. 49, t. 14, f. 1; DC. Prodr. 1, p. 470.

Hab. Yanga, near Lima, Peru. (Also gathered at Lima, by Mr. Cuming.)

7. Abutilon incanum, *Don.*

Sida incana, Link. Enum. Hort. Berol. 2, p. 204; DC. Prodr. 1, p. 468.

Hab. Oahu, Sandwich Islands; on Diamond Hill, and likewise on the coast near Honolulu. (Also gathered by Chamisso, Macrae, and Nuttall.)

Plant low, a foot or so in height, clothed all over with a very fine and close velvety and canescent tomentum. Stems slender, diffusely branched from a woody or suffrutescent base, leafy. Stipules very small, filiform, deciduous. Leaves cordate-ovate, acuminate or acute, or those of the sterile branchlets rounded-cordate, finely serrate, almost equally canescent both sides with the very soft tomentum; the cauline an inch to an inch and a half long, and on petioles of fully half their length; those of the flowering branches smaller. Peduncles mostly axillary and solitary, exceeding the leaves, about an inch long, articulated near the apex. Flower 3 lines in length. Calyx canescent, five-cleft to the middle, about half the length of the yellow corolla, much shorter than the capsule, spreading in fruit. Capsule cinereous-tomentose, short-oblong, pentacarpellary, strongly five-lobed, truncate at the apex; the carpels barely mucronulate at their obtuse tips, dehiscent at the apex and down the dorsal suture, three-seeded. Seeds globular, pubescent, superposed.

This species much resembles the North American *Abutilon Texense;* but the leaves are clothed with a still softer and whiter indumentum, the flowers are smaller, the carpels are only five, and the seeds are minutely downy.

8. Abutilon tubulosum, *Hook.*

Abutilon tubulosum, Hook. in Mitch. Jour. Trop. Austral. p. 368, adn.

Hab. Hunter's River, New South Wales. (A fragment only was gathered.)

7. URENA, *Linn.*

1. Urena lobata, *Linn.* &

Var. rhombifolia: *foliis basi 3–5-nerviis haud cordatis ovato-rhombeis oblongisve integris subtus cano-tomentosis; fructu longiuscule echinato.*

Urena monopetala, Lour. Fl. Coch. ed. Willd. 2, p. 508?

Var. scabriuscula: *foliis subrotundis 7–9-nerviis acutiuscule 3–5-lobatis scabriusculis subtus albo-tomentosis, nervis cum petiolo ramisque hirsutis; involucelli hispidi segmentis linearibus calycem superantibus; fructu longiuscule echinato.*

Urena scabriuscula, DC. Prodr. 1, p. 441; Wight & Arn. Prodr. Ind. Or. 1, p. 46.
U. lobata, β. tomentosa, Walp. Rel. Meyen. p. 304.
U. lobata, γ. Hook. f. Fl. Nigrit. p. 226.

Hab. Rio Janeiro, "probably introduced." Tahiti. Tongatabu. Samoan or Navigators' Islands. Feejee Islands.—Var. *rhombifolia*, Ovolau, Feejee Islands.—Var. *scabriuscula*, Mountains near Baños, Luzon. (Philippine Islands, Cuming, No. 469.)

Of this widely spread species various forms were collected, principally with rounded, cordate or ovate-subcordate, and scarcely lobed leaves, which are either green both sides, and more or less pubescent underneath, or with the lower surface canescently velvety-tomentose. In all of them the segments of the involucel are lanceolate and about the length of the calyx, and the fruit is armed with short glochidate prickles. They pass into the first variety, in which the fruit is armed with rather longer prickles; the *leaves white-tomentose underneath*, glabrate above, only 3–5-*nerved* at the base, which is either acutish or rounded, not cordate, *rhombic-ovate*, varying to oblong or ovate-lanceolate, *not lobed*, the larger ones doubly toothed. This might be the *U. viminea* of Cavanilles; but the involucel is no longer than the calyx, and its segments are obtuse.—The second variety has rather larger flowers and fruit, the latter densely armed with larger prickles; the leaves are large (3 or 4 inches in diameter) and rounded, subcordate, 7–9-nerved, flabellately 3–5-lobed; the lobes short, coarsely and sparingly toothed, and finely serrulate; the upper surface *roughish* with a short stellate pubescence, the lower *canescently tomentose, and hirsute* on the ribs and veins; the petioles, branchlets, &c., also hirsute with spreading hairs. The calyx and involucel are *hispid* or strongly hirsute, and the segments of the latter are narrowly *linear*, acute, and longer than the calyx.

2. URENA MORIFOLIA, *DC.*

Urena morifolia, DC. Prodr. 1, p. 442.

Var. *foliis hirsutulis, superioribus sæpe indivisis lineari-elongatis.*

HAB. Feejee Islands; in cultivated ground at Rewa.

This must, I think, belong to DeCandolle's *Urena morifolia*, which came from the Friendly Islands, although the leaves when young are rather *strigose-hirsute* than tomentose, and when full grown are *sparingly hirsute* and scarcely paler underneath. It resembles *U. sinuata;* but the leaves are larger, from 3 to 5 or more inches in length, very deeply 3–5-lobed; the lobes, at least the three larger ones, obtusely three-lobed and sinuate above, contracted below into an elongated and linear base, which is sharply serrate, as are likewise the very wide sinuses. The uppermost leaves, in the single specimen, are *linear-elongated*, something as those of *U. reticulata* are represented by Cavanilles, and either undivided, or barely sinuate-toothed, or obscurely 1–3-lobed. Involucel hirsute; the segments as long as the calyx.

8. MODIOLA, *Mœnch.*

1. Modiola reptans, *St. Hil.*

Modiola reptans, St. Hil. Fl. Bras. Mer. 1, p. 212, t. 43.

Hab. Rio Negro, North Patagonia;—according to Dr. Pickering's notes. Not found in the collection.

9. SPHÆRALCEA, *St. Hil.*

1. Sphæralcea obtusiloba, *Gay.*

Sphæralcea obtusiloba, C. Gay, Fl. Chil. 1, p. 291.
Malva obtusiloba, Hook. Bot. Mag. t. 2787; Hook. & Arn. Bot. Misc. 3, p. 151.

Hab. Chili, near Valparaiso.

10. PAVONIA, *Cav.*

1. Pavonia communis, *St. Hil.*

Pavonia communis, St. Hil. Fl. Bras. Mer. 1, p. 224.

Hab. Organ Mountains, near Rio Janeiro, Brazil.

2. Pavonia sepium, *St. Hil. l. c.*

Hab. Near Rio Janeiro; common.

3. Pavonia hastata, *Cav.*

Pavonia hastata, Cav. Diss. 3, p. 178, t. 47, f. 2; St. Hil. Fl. Bras. 1, p. 228.

HAB. Hunter's River, New South Wales!

The specimens (which are in fruit) perfectly accord with the *Pavonia hastata* of Southern Brazil, a species very unlikely to occur in Australia, at some distance too from the coast. I cannot but suspect some transposition of the tickets, and that the plant may really have been gathered on the Rio Negro, or at Rio Janeiro: but there is no mention of such a plant in Dr. Pickering's notes on the collections made at these places. No separate memoranda have been furnished me respecting the Australian collection. The point must be left for future elucidation.

11. ABELMOSCHUS, *Medik.*

1. ABELMOSCHUS MOSCHATUS, *Mœnch.*

Abelmoschus moschatus, Mœnch, Meth. p. 616; Wight & Arn. Prodr. Ind. Or. p. 53; Guillem. Zeph. Tait. p. 72.
Hibiscus Abelmoschus, Linn.; Cav. Diss. 3, t. 62; DC. Prodr. 1, p. 452.
H. Pseudo-Abelmoschus, Blume, Bijdr. p. 70.

HAB. Tahiti. Tongatabu. Samoan Islands. Feejee Islands. Mindanao, Philippine Islands.

This is found only in cultivated grounds throughout the South Sea Islands, where it has doubtless been widely diffused by the natives. The leaves vary greatly in the number and depth of their lobes.

2. ABELMOSCHUS ESCULENTUS, *Wight & Arn. l. c.*

HAB. Feejee Islands, &c.; "cultivated by the natives; the leaves seem to be principally used."—There are no specimens of this, the well-known *Ochra*, preserved in the collection.

3. ABELMOSCHUS MANIHOT, *Medik.*

HAB. Partly naturalized in the Society, Samoan, Tonga, and Feejee

Islands, according to Dr. Pickering. There are no specimens in the herbarium.

12. HIBISCUS, *Linn.*

1. Hibiscus (Gamochlæna) Sturtii, *Hook.*

Hibiscus Sturtii, Hook. in Mitch. Jour. Trop. Austral. p. 363, adn.

Hab. Hunter's River, New South Wales.

The turbinate involucel is gamophyllous almost to the summit; on account of which, and of the oligandrous column, this species appears to be the type of a distinct section of the genus.

2. Hibiscus physaloides, *Guillem. & Perr.*

Hibiscus physaloides, Guillem. & Perr. Fl. Seneg. p. 52; Hook. Niger Fl. p. 227.

Hab. St. Jago, Cape Verde Islands;—where it was also gathered by Dr. Hooker.

3. Hibiscus Rosa-Sinensis, *Linn.*

Hab. Feejee Islands: along banks of mountain streams at Ovolau, where it has probably escaped from cultivation. Cultivated for the beauty of the flowers, near their dwellings, by the natives of the Feejee, Samoan, and Society Islands.

4. Hibiscus Æthiopicus, *Linn.*

Hibiscus Æthiopicus, Linn. Mant. p. 258; Cav. Diss. 3, t. 61, f. 1; Eckl. & Zeyh. Enum. Pl. Afr. Austr. p. 38.

Hab. Cape of Good Hope, near Cape Town.

5. Hibiscus Trionum, *Linn.*

Hibiscus vesicarius, Cav. Diss. 3, p. 171, t. 64, f. 2, ex Hook. f. Fl. N. Zeal.
H. tridactylites, Lindl. in Mitch. Jour. Trop. Austral., & in Ann. Sci. Nat. ser. 2, 15, p. 57.

Hab. St. Helena. Woolongong, New South Wales. Indigenous?

6. Hibiscus heterophyllus, *Vent.*

Hibiscus heterophyllus, Vent. Hort. Malmais. t. 103; DC. Prodr. 1, p. 450.

Hab. Newington, New South Wales.

7. Hibiscus bifurcatus, *Cav.*

Hibiscus bifurcatus, Cav. Diss. 3, p. 146, t. 51, f. 1; DC. Prodr. 1, p. 449; St. Hil. Fl. Bras. Mer. 1, p. 246.

Hab. Rio Janeiro, Brazil.

8. Hibiscus diversifolius, *Jacq.*

Hibiscus diversifolius, Jacq. Ic. Rar. 3, t. 551; DC. Prodr. 1, p. 449; Endl. Prodr. Fl. Norf. p. 74.
H. ficulneus, Cav. Diss. 3, p. 148, t. 51, f. 2.

Hab. Sandal-wood Bay, Feejee Islands; in an open marsh.

A species allied to the *Hibiscus scaber*, Michx., of the Southern United States; but I think distinct from it, although the two are united in Hooker's Niger Flora.

9. Hibiscus Youngianus, *Gaud.*

Hibiscus Youngianus, Gaud. Bot. Voy. Freyc. p. 91 (abs. char.); Hook. & Arn. Bot. Beech. Voy. p. 79.

Hab. Oahu, Sandwich Islands; in marshes, near Honolulu.

The specimens afford nothing of importance to add to the description given by Hooker and Arnott. The branches, petioles, and lower surface of the leaves are velvety-canescent; the former armed with short setæ rather than prickles: these are fragile and at length deciduous, leaving a persistent papillose base. The upper leaves are slightly if at all lobed, and are mostly acute or acuminate. Peduncles half or two-thirds of an inch long, stout, tomentose, and setose-hispid. Involucel and calyx hispid; the former of 10 or 12 filiform divisions, all or most of them two-lobed at the apex; the latter strongly ten-nerved, the lobes triangular-lanceolate, in fruit closed over the capsule. Corolla "rose-colour;" the petals 3 inches long. Capsule canescently hispid with appressed bristles, an inch long, rather shorter than the persistent calyx. Seeds numerous, very smooth.

10. Hibiscus Brackenridgei, Sp. Nov. (Tab. 12.)

H. fruticosus, glabellus; foliis longe petiolatis membranaceis rotundatis 5–7-fidis, sinubus angustis, lobis grosse dentatis; floribus breviter pedunculatis axillaribus ad apicem caulis confertis; involucelli phyllis 8 *setaceo-subulatis integris rigidis calycem hispidissimum æquantibus; capsula sericeo-hispida, loculis* 4–5-*spermis; seminibus lepidotis.*

Hab. On a mountain in the west division of Maui, one of the Sandwich Islands.

Stem *shrubby* (the height not recorded); the flowering branches rather stout, glabrous, or when young scurfy-puberulent with the stellular pubescence of this family, very leafy; the lower part tuberculate with the approximated leaf-scars. Leaves crowded, on *long petioles* (the longer petioles 3 or 4 inches in length, and exceeding the blade), *membranaceous* in texture, nearly glabrous, *rounded* in outline and subcordate, or with an angular sinus at the base, 5–7-ribbed, *five-cleft* to the middle or deeper, or sometimes *seven-cleft* (when the two basal lobes are smaller); the lobes separated by acute and very *narrow sinuses*, somewhat ovate in form, acute or obtuse, veiny, unequally and *coarsely toothed*, and often more or less incised; the terminal lobe little prolonged. The whole shape of the leaf is much like that of the common Grape-vine: the larger ones are 4 inches, the smaller 2 inches in diameter. Stipules setaceous, caducous. Flowers *solitary in the axils* of the leaves at the summit of the branches, where they are much *crowded:* the peduncles, or rather pedicels (since they are articulated at their insertion), only half or a third of an inch in length, pubescent and sparingly hispid. *Leaflets of the involucel* 8, *setaceous-subulate*, *rigid* in texture, nearly glabrous, spreading, *entire*, adnate to the base of the calyx, 8 to 10 lines long, about the length of the calyx, persistent, not at all glanduliferous. *Calyx very hispid* with fulvous spreading hairs, at least when young, five-cleft to below the middle, persistent; the short tube ten-ribbed; the lobes lanceolate, acute, each bearing an oblong *dorsal gland* on its midrib near the base. "Corolla yellow," turning green in drying; the petals doubtless spreading, pubescent externally, an inch and a half or two inches long. Stamineal column antheriferous for a great part of its length, five-toothed at the apex, straight, not longer than the corolla. Style five-lobed only at the apex; the short lobes hirsute: stigmas depressed-capitate. Ovary densely villous-hispid, five-celled, with 4 to 6 biseriate ovules in each cell. Capsule ovoid, closely invested by the calyx and rather shorter than its lobes, two-thirds of an inch long, *silky-hispid* with appressed hairs, loculicidally five-valved, five-celled; the cells 4–5-*seeded*. Seeds angled, minutely tomentose at the hilum; the surface *scurfy, with star-shaped scales*. Embryo, &c., as in the genus.

This is a striking and well-marked new species, apparently of the section *Ketmia*, which does not resemble any other known to me.

Plate 12.—Hibiscus Brackenridgei: in flower and fruit, of the natural size. Fig. 1. Vertical section, through the column, pistil, &c., enlarged. 2. Vertical section of a capsule, with the persistent calyx, of the natural size. 3. A seed, enlarged. 4. The embryo, more enlarged.

11. Hibiscus Arnottianus, *Gray*.

H. fruticosus, glaberrimus; foliis ovatis seu ovalibus subcoriaceis integerrimis (nunc subdentatis) basi trinervatis; floribus solitariis pedun-

culatis; involucelli phyllis 5–7 parvis deciduis; petalis (rubris) oblongis basi attenuatis atque in tubum gracilem calyce cylindrico longiorem coalitis; columna staminea prælonga spithamæa; capsula polysperma.

Hibiscus Arnottianus, Gray, in herb. Hook. anno 1837.
H. Boryanus, Hook. & Arn. Bot. Beech. Voy. p. 79, non DC.

HAB. Sandwich Islands; on the Kaala Mountains behind Honolulu, Oahu; where it was also gathered by Macrae, Lay and Collie, Diell, Barclay, &c. (Byron's Bay, Hawaii, Macrae, Diell.)

A *shrubby* species, several feet in height, *glabrous* throughout, especially the leaves. *Leaves ovate* or *oval*, mostly obtuse, rounded or sometimes slightly contracted at the base, where they are *three-nerved*, or obscurely five-nerved, chartaceous or *somewhat coriaceous* in texture, *entire* (rarely a little toothed, at least in Hawaiian specimens) green, and of the same hue both sides, 2½ to 4 inches long; the petioles an inch or an inch and a half in length. Stipules subulate, caducous. Flowers solitary, terminating the branches, or in the uppermost axils, *peduncled;* the peduncle 6 to 12 lines, or even 2 inches in length, articulated towards the summit. Involucel very much shorter than the calyx, of 5 to 7 lanceolate or subulate and entire leaflets, only 2 or 3 lines long, more or less *deciduous. Calyx cylindrical* or tubular, two-thirds of an inch in length, membranaceous, not inflated, rather deeply five-toothed at the apex (the teeth triangular, puberulent within), glabrous externally, inclining to split down one side with age, but not in a regular manner. Corolla red or deep rose-colour; the *petals oblong*, or narrowly obovate, 2½ inches long, apparently ascending, narrowed at the base, and united into a slender tube, of nearly an inch in length, which is *exserted beyond the calyx. Stamineal column very long* (5 or 6 inches in length), slender, erect, or perhaps declined, the upper half exserted beyond the corolla and copiously antheriferous: the filaments capillary, nearly an inch long, puberulent. Style five-cleft at the apex. Stigmas capitate. Ovary five-celled, oblong, glabrous. Ovules numerous in each cell, biserial, glabrous.

This plant was referred by Hooker and Arnott to *Hibiscus Boryanus*, DC.; a native of the Isle of Bourbon, which is described as having very short-pedicelled and whitish flowers, with the petals velvety-pubescent externally, and an involucel rather longer than the calyx. Noticing these points when I long ago examined a collection of Sandwich Island plants, made by the late Rev. John Diell, I communicated a specimen to the herbarium of Sir William Hooker, under the name of *Hibiscus Arnottianus*, which is here adopted. It is a very showy species, apparently of the section *Cremontia;* although the petals are expanded in anthesis. According to Hooker and Arnott, the seeds are clothed with fulvous hairs. None of the specimens in the collection of the Expedition show the fruit; but the ovules, after the corolla has fallen, are *glabrous*.

13. PARITIUM, *Adr. Juss.*

1. Paritium tiliaceum, *Adr. Juss.*

Paritium tiliaceum, Adr. Juss. in St. Hil. Fl. Bras. Mer. 1, p. 256; Wight, Ic. Pl. Ind. Or. t. 7.
Hibiscus tiliaceus, Linn.; Cav. Diss. 3, t. 55; Gærtn. Fruct. t. 135; DC. Prodr. 1, p. 454.

Hab. Society, Samoan, Tonga, Feejee, and Sandwich Islands. Luzon, near Manilla. Rio Janeiro.

A small tree. "In the deep interior woods of Savaii, Samoan Islands, it attains the height of sixty feet."

2. Paritium tricuspis, *Guill.*

Paritium tricuspis, Don. Syst. Bot. 1, p. 485; Guill. Zeph. Tait. p. 72, cum descr. Forst. MS.
Hibiscus tricuspis, Cav. Diss. 3, p. 152, t. 55, f. 2; DC. l. c.; Hook. & Arn. Bot. Beech. p. 60.
H. hastatus, Linn. f. Suppl. p. 310; Forst. Prodr. Ins. Austr. p. 49.

Hab. Tahiti, Society Islands; near the coast: rather rare.

14. THESPESIA, *Correa.*

1. Thespesia populnea, *Correa.*

Thespesia populnea, Correa, in Ann. Mus. Par. 9, p. 290, t. 8; DC. Prodr. 1, p. 455.
Hibiscus populneus, Linn.; Cav. Diss. 3, t. 56, f. 1.
H. bacciferus, Forst. Prodr. Ins. Austr. p. 48.

Hab. Society, Samoan, Tonga, and Feejee Islands. (Cultivated in the Sandwich Islands.) Mangsi Islands.

15. GOSSYPIUM, *Linn.*

1. Gossypium religiosum, *Swartz.*

Hab. Plains of Waianae and Ewa, Oahu, Sandwich Islands.

2. Gossypium Barbadense, *Linn.*

Hab. Society, Tonga, Samoan, and Feejee Islands. Coast of Oahu, Sandwich Islands.

3. Gossypium herbaceum, *Linn.*

Hab. Vanua-levu, Feejee Islands.

No one has yet satisfactorily elucidated the species of Cotton. Our first-mentioned species has finely canescent-tomentulose leaves and branchlets, and copper-coloured wool: from the latter character it should be the *Gossypium religiosum* of Swartz, and the *G. croceum* of Hamilton. The second, with thinner leaves of various outline, has white cotton and dark seeds; and is therefore *G. nigrum* of Hamilton. The third, with ample and deeply five-lobed leaves, has white cotton and whitish seeds, and is accordingly the *G. album* of Hamilton. All these species were doubtless introduced into the South Sea Islands.

16. HOHERIA, *A. Cunn.*

1. HOHERIA POPULNEA, *A. Cunn.*

Hoheria populnea, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 319; Hook. Ic. Pl. t. 565, 566; Hook. f. Fl. N. Zeal. p. 30.
H. angustifolia, Raoul, Pl. N. Zel. p. 48, t. 26, var. fide Hook. f.

HAB. Bay of Islands, New Zealand.

Dr. Hooker enumerates four varieties of this species (including the *H. angustifolia* of Raoul), which, thus viewed, is very variable as to foliage. Our collection contains only the original or typical form; the fruit of which, I may remark, bears fully as large and long a wing as that delineated by Raoul, in the work cited above. Mr. Cunningham referred this genus to the *Bombaceæ*; but Sir William Hooker justly insisted on its close relationship to *Sida*; and recently Dr. Hooker has referred both it and *Plagianthus* to the proper *Malvaceæ*. Here they would fall into the tribe *Malveæ*, in the arrangement which I formerly sketched;[*] where a new subtribe (PLAGIANTHEÆ) should, I think, be constituted for their reception, between the *Eumalveæ* and the *Sideæ*, characterized by the *simple pentadelphous column, the capitate or introrse stigmata*, and the solitary *resupinate-suspended ovules*. This would place them next to *Sidalcea*, in which the stamens are similarly united in 5 phalanges, opposite the petals; but that has the inner series of stamens likewise developed, which does not occur in any other genuine Malvaceous genus. If the details of Raoul's plate above-cited (Fig. 4) were strictly correct, *Hoheria* would exhibit a character not previously recognised in *Malvaceæ*; namely, a truly suspended ovule with the rhaphe internal. In fact, however, the rhaphe is dorsal, and the ovule (which is truly anatropous) is accordingly resupinate, as in *Sida*. There is a similar oversight in the details of the plate of Dr. Hooker's *Hoheria Lyallii* (Flora of New Zealand, Plate 11, fig. 4, 6), where the radicle is wrongly represented by the artist as superior and *dorsal*.—The introrse, although terminal, stigmas of this latter plant (those of *Hoheria populnea* being strictly and conspicuously terminal, and so represented both by Raoul and Sir William Hooker), as well as the total want of wings to the fruit, should doubtless exclude it from Hoheria. Notwithstanding the more numerous carpels, I scarcely doubt that it is a congener of *Sida pulchella* (Bonpl.*), Hook., and *S. Tasmannica*, Hook. f.; both of which are species of *Plagianthus* (including *Asterotrichion*), or at least differ from *P. sidoides* only in having one or two more carpels.

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[*] Genera Floræ Am. Bor.-Or. Illustrata, 2, p. 46.—*Lawrencia*, Hook. is wrongly placed in the conspectus referred to. At least *Lawrencia spicata* has introrsely stigmatose styles; and therefore, notwithstanding its resupinate-pendulous ovules, the genus must be referred to the *Eumalveæ*, next to *Napæa*; unless, indeed, the stamens should prove to be pentadelphous, which does not appear to be the case in the badly-preserved flowers I have examined.—Moreover, the name *Lawrencia* is preoccupied by *Laurencia* in the *Algæ*, a genus received by all modern Algologists. This Malvaceous genus may be transformed by an anagram into *Wrenciala*.

17. PLAGIANTHUS, *Forst.*

1. PLAGIANTHUS DIVARICATUS, *Forst.*

Plagianthus divaricatus, Forst. Char. Gen. t. 43, & Prodr. p. 47; Hook. Bot. Mag. t. 3271; A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 4, p. 24; Hook. f. Fl. N. Zeal. p. 29.

HAB. Bay of Islands, New Zealand. (In fruit.)

This is the type of a Malvaceous genus, in which the gynæcium is reduced to the last degree of simplicity, *P. divaricatus* being monocarpellary.—The excellent figure in the Botanical Magazine, above-cited, represents the stigmas of the sterile flowers: those of the fertile flowers I find (in cultivated specimens) to be more clavate, or even capitate. The figure of the Tasmannian *Plagianthus sidoides*, Hook., in the same work, Plate 3396 (the *Asterotrichion sidoides* of Klotzsch), apparently represents the sterile flowers alone. In this also the stigmas of the fertile flowers are more clavate and truncate, and sometimes three or even four in number. So in *Sida Tasmannica*, Hook. f., and *S. pulchella*, Bonpl., Hook., the male flowers have the styles reduced to two, three or four, while those of the fertile flowers are pentacarpellary. As both of them equally have pentadelphous stamens, as well as the general aspect of *P. sidoides*, they should manifestly be referred to the same genus. The ovule, in all of them, is resupinate-suspended, as in *Sida*.

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* The carpels of *Sida pulchella* are said by DeCandolle to be *biaristate*. (I have not access to the work in which the species was originally published.) In fruiting specimens of Gunn's plant they are muticous.

Plagianthus betulinus, Cunn. (to which Dr. Hooker refers *P. urticinus*, Cunn.), also found at the Bay of Islands, does not occur in our collection, so far as I am aware.

ORD. STERCULIACEÆ.

I. ERIODENDRON, *DC.*

1. ERIODENDRON TRISCHISTANDRUM, Sp. Nov.

E. trunco parce aculeato; foliolis 5–7 *subintegerrimis acuminatis; petalis extus sericeo-lanosissimis; staminibus pentadelphis, phalangibus singulis e filamentis* 3 *infra medium coalitis apice monanthiferis; antheris anfractuosis.*

HAB. Gathered in a garden at Lima, Peru; the origin not recorded.

Of this remarkable species, separate leaves and fallen corollas, with the adherent androecium, only were gathered, from a tree which is said in Dr. Pickering's notes to be "30 feet high, the trunk swelling in the middle, and armed with a few short spines," or prickles. The flowers are said to be "white." The leaves are glabrous, digitately 5–9-*foliolate;* the leaflets oblong, 2½ to 3½ inches long, *entire* or obscurely repand-serrulate towards the apex, which is abruptly and conspicuously *acuminate*. They resemble those of *Eriodendron leiantherum*, DC., as figured by Cavanilles (under the name of *Bombax erianthos*), or those of *E. Samauma* of Martius, except that they are for the most part abruptly acuminate. The petals are from 1½ to 2 inches long, oblong-obovate, very *thickly clothed* on the outside (except their coalescent bases) *with a silky wool*, the hairs mostly reversed; their inner face glabrous, or a little pubescent towards the apex. Filaments coriaceous, monadelphous only at the base, where they are coalescent with the corolla, dividing almost as soon as they become free into *five phalanges*, which answer to the five stamens of *E. leiantherum*, *E. Samauma*, &c. These apparently alternate with the petals. The phalanges, or united portion of the filaments, are half an inch or more in length, linear-filiform, each dividing into 3 *filaments*, of about the length of the petals, bearing *single anfractuose anthers*. The anthers, having all discharged their pollen, are too old to be minutely investigated. They resemble those of *E. Samauma*, however, as figured by Martius, are equally elongated, and apparently fixed by the middle, and continuously one-celled (the cell of course longitudinally *bilocellate* by the septum, here more or less persistent, which normally divides the cavity, at least in an early state); but the turns are closer and more heaped together, which is probably owing to their condition after anthesis. They are very unlike those of *E. leiantherum;* the corolla of which appears closely to resemble that of the present plant, except in its greater size. The style is filiform, longer than the stamens, and terminated by a capitate, obscurely five-lobed stigma.

I find no indication of any published species to which this plant can belong.* Its remarkable peculiarity, it will be seen, consists in the division (*chorisis*) of each of the five filaments into three;—notwithstanding which I do not hesitate to refer the species to the genus *Eriodendron*, modified by the needful extension of the generic character.

Chorisia speciosa, St. Hil., is mentioned by Dr. Pickering as found abundantly around Rio Janeiro; but there is no specimen in the collection.

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* In the Hookerian herbarium there is a specimen marked "Lima, ex Herb. Ruiz & Pavon," and also "Loxa, 805," which appears to be the same as our plant, and may therefore throw some light upon the habitat of the species. Unfortunately the stamens are destroyed by insects, which renders perfect identification impossible.

2. HELICTERES, *Linn.*

1. Helicteres ovata, *Lam.*

Helicteres ovata, Lam. Dict. 3, p. 88 (excl. β. & γ.); St. Hil. Fl. Bras. Mer. 1, p. 273.

Hab. Near Rio Janeiro, Brazil; common. (In fruit.)

3. HERETIERA, *Dryand.*

1. Heretiera littoralis, *Dryand.*

Heretiera littoralis, Dryand. in Ait. Hort. Kew. 3, p. 546; DC. Prodr. 1, p. 484; R. Br. in Horsf. Pl. Jav. Rar. p. 237.
H. Fomes, Buchanan; Willd. Spec. 4, p. 972; DC. l. c. ex R. Br.
H. minor, Lam. Dict. 3, p. 229; DC. l. c. ex R. Br.
Balanopteris Tothila & B. minor, Gærtn. Fruct. 2, t. 98, 99.

Hab. Sooloo Islands. Feejee Islands. Tongatabu: in lagoons.

Some of the leaves, from both localities, are acuminate and nearly lanceolate; thus agreeing with the character of the second species admitted by Mr. Brown, *Heretiera lanceolata* of Wallich. The large fruit is sharply carinate at the sutures, rather than winged.

4. STERCULIA, *Linn., R. Br.*

1. Sterculia Ceramica, *R. Br.*

Sterculia Ceramica, R. Brown, in Horsf. Pl. Jav. Rar. p. 233.

Hab. Small island, in the Sooloo Sea.

The flowers are very numerous, in compound panicles. The short lobes of the calyx are more or less tomentulose inside, and are not coherent at their apices. The stigmas are subsessile and connate. Follicles furfuraceous-tomentose, short-stipitate, very turgid, an inch and a half in length along the straight dorsal suture. Seeds 3 or 4, cylindrical-oblong, 5 lines in length; the testa smooth and reddish, except at the apex, where it is furfuraceous. Cotyledons adnate to the albumen.

5. BRACHYCHITON, *Schott & Endl., R. Br.*

1. BRACHYCHITON POPULNEUM, *R. Br.*

Brachychiton populneum, R. Brown, in Horsf. Pl. Jav. Rar. p. 234.
Pœcilodermis populnea, Schott & Endl. Melet. Bot. p. 33.

HAB. Hunter's River, New South Wales. (In flower.)

6. FIRMIANA, *Marsili.*

1. FIRMIANA DIVERSIFOLIA, Sp. Nov. (Tab. 13.)

F. foliis cordatis integris vel apice trilobis (quandoque quinquelobis?), lobis acuminatis; folliculis apertis oblongo-lanceolatis utrinque obtusis breviter stipitatis.

HAB. Ovolau (and Vanua-levu?), Feejee Islands.

A tree of considerable size. *Leaves cordate, entire*, or nearly so, and acuminate, or *three-lobed towards the apex*, 7–9-ribbed, reticulate-veined, membranaceous, 6 to 9 inches long and 5 to 8 inches wide, glabrous, or the under surface, with the branchlets, &c., very minutely stellate-puberulent under a lens; the lobes short, triangular and *acuminate*, the middle one longer. Petioles 4 or 5 inches long. Flowers not seen. Fructiferous panicles ample. Common gynophore 3 lines long, glabrous, peltately dilated at the apex, where it bears 5 carpels on slender but *short stipes* (4 or 5 lines long). The mature follicles are all *open and leaf-like*, in the manner of the genus, membranaceous, very veiny, glabrous or nearly so, *oblong-lanceolate*, 2½ inches long, at most an inch wide, *obtuse at both ends*, abruptly tipped with a small mucroniform style; the edges not thickened towards the base, each bearing one or 2 seeds. Seed globular, 3 lines in diameter, attached by a short linear hilum, without any funiculus, semianatropous; the testa, or outer integument, thin, rather fragile, and wrinkled when dry, but apparently fleshy in the living state; the inner integument crustaceous, although rather thin, umbilicate at the chalaza, lined with a very thin membrane. Albumen fleshy. Embryo as long and as broad as the albumen, nearly straight; the short radicle a little bent towards the hilum: cotyledons nearly plane, broadly oval, foliaceous.

The five-lobed leaves, either of a second species, or more probably of a variety of this, destitute of flowers or fruit, were gathered at Sandalwood Bay, on Vanua-levu, according to Dr. Pickering's notes. They are not found in the collection.

PLATE 13.—FIRMIANA DIVERSIFOLIA: a branch in fruit. Fig. 1. A seed, enlarged. 2. A longitudinal section of the same parallel with the hilum. 3. A transverse section of the seed. 4. A longitudinal section parallel with the cotyledons, the breadth of which is displayed. The analyses magnified.

Ord. BUTTNERIACEÆ.

1. SERINGIA, *Gay.*

1. Seringia platyphylla, *Gay.*

Seringia platyphylla, Gay, in Mem. Mus. Par. 7, p. 442, t. 16, 17; DC. Prodr. 1, p. 488; Steetz, in Pl. Preiss. 2, p. 349.

Hab. Near Sydney, New South Wales.

The five ovaries are connivent, so as to appear like a five-lobed compound ovary; and the five styles, although separable, are manifestly coherent for their whole length.

2. THOMASIA, *Gay.*

1. Thomasia quercifolia, *Gay, l. c.*

Hab. Near Sydney, New South Wales. (Without flowers or fruit.)

3. LASIOPETALUM, *Smith.*

1. Lasiopetalum ferrugineum, *Smith.*

Hab. Near Sydney, New South Wales.

4. RULINGIA, *R. Br.*

1. Rulingia pannosa, *R. Br.*

Rulingia pannosa, R. Brown, in Bot. Mag. t. 2191; Steetz, in Pl. Preiss. 2, p. 351.
Buttneria pannosa, DC. Prodr. 1, p. 486.
B. dasyphylla, Gay, in Mem. Mus. Par. l. c. p. 200, t. 12; DC. l. c.

Hab. Sydney, New South Wales. (In flower.)

5. COMMERSONIA, *Forst.*

1. Commersonia Fraseri, *Gay.*

Commersonia Fraseri, Gay, in Mem. Mus. Par. l. c. p. 215, t. 15; Steetz, in Pl. Preiss. 2, p. 359.

Hab. Sydney, New South Wales. (In fruit.)

2. Commersonia echinata, *Forst.*

Commersonia echinata, Forst. Char. Gen. p. 43, t. 22; DC. Prodr. 1, p. 486; Guill. Zeph. Tait. p. 71.

Hab. Tahiti and Eimeo, Society Islands; on mountain ridges.

The specimens accord with the detailed description published by Guillemin from Forster's manuscripts. The cordate-lanceolate leaves are glabrous or merely stellular-scabrous above, and velvety-canescent underneath. The prickles of the fruit are hirsute-pubescent.

3. Commersonia platyphylla, *DC. l. c.*

Commersonia Javensis, Don, Syst. Bot. 1, p. 523; Hassk. Pl. Jav. Rar. p. 312.
C. echinata, Blume, Bijdr. p. 86.

Hab. Samoan and Feejee Islands. Tahiti (unless a ticket is misplaced). Singapore.

The leaves are broader than in the foregoing species, roughish-pubescent (or at length glabrate) above, whitish-tomentose and more veiny underneath. Cymes compound and many-flowered. Prickles of the fruit very villous.

6. AYENIA, *Linn.*

1. Ayenia tomentosa, *Linn.*

Hab. In the vicinity of Rio Janeiro, Brazil.

This is the same as No. 5372 of Gardner's Brazilian collection. The leaves are elliptical or oblong, rather than ovate-subrotund. The anthers are *trilocular,* as I had already remarked them to be in *Ayenia pusilla* and *A. microphylla* (Plantæ Wightianæ, 2, p. 24).

7. KLEINHOVIA, *Linn.*

1. Kleinhovia Hospita, *Linn.*

Hab. Ovolau and Vanua-levu, Feejee Islands. Upolu, Samoan Islands. Tahiti, Society Islands.

Finding no record of this tree in Dr. Pickering's botanical notes, I cannot learn whether it is truly indigenous in all or any of these localities. It has not previously been recorded from the South Sea Islands.

8. WALTHERIA, *Linn.*

1. Waltheria Americana, *Linn.*

Hab. Rio Janeiro. Upolu, Samoan Islands. Vanua-levu and

Oneata, Feejee Islands. Hawaii and Oahu, Sandwich Islands, on the coast.

All the specimens from the South Sea Islands, having sessile heads, belong to the *Waltheria Indica* of Linnæus, which has been justly united to *W. Americana*. Those from Rio and the Sandwich Islands have the heads either pedunculate or sessile. In this, as in the following species (vid. Cav. Diss, infra cit. f. x.), some flowers have the andrœcium less developed than others, their shorter filaments being monadelphous nearly to the top, while in others they are united only at the base.

2. WALTHERIA OVATA, *Cav.*

Waltheria ovata, Cav. Diss. 6, p. 317, t. 171, f. 1; DC. Prodr. 1, p. 493.

HAB. Yaso, Caball, and below Obrajillo, Peru.

Well distinguished by the fine and close velvety tomentum, the broadly ovate leaves, and the pointless calyx-lobes, which are entirely destitute of hirsute hairs.—Nearly related to this is Dr. Hooker's *W. reticulata.*

3. WALTHERIA PYROLÆFOLIA, Sp. Nov.

W. fruticosa; foliis confertis coriaceis rotundis sæpius utrinque retusis serrulatis plicato-venosis supra glabris subtus canescentibus glabratis; glomerulis axillaribus subsessilibus plurifloris; calycis cano-sericei lobis lanceolatis obtusis petalis glaberrimis brevioribus.

HAB. Sand-hills near Wailuku, Maui, Sandwich Islands.

Stems from a foot to 3 feet high, erect, *shrubby* to the top, much branched; the branches, petioles, &c., canescently villous-tomentose, rigid. *Leaves crowded* on the branches, *coriaceous, roundish*, inclining to orbicular-obovate, commonly more or less *retuse* both at the base and apex, about an inch in length and breadth (the smaller 8 or 9 lines long, the largest an inch and a half in length and of nearly the same width), *finely-toothed*, somewhat *plicately straight-veined;* the *upper surface glabrous*, or slightly puberulent when very young; the *lower canescent* or cinereous with a fine and close pubescence, minutely reticulated between the primary veins, becoming *almost glabrous* (but pale) when old. Petioles from 3 to 6 lines long. Stipules setaceous, early deciduous. Flowers crowded in *subsessile axillary glomerules* or heads, which are not very dense, or the cluster rarely on a peduncle which almost equals the petiole, inclined to be secund. Bracts lanceolate, mostly obtuse, silky-villous like the calyx, which they equal in length. *Calyx canescently silky-villous* with fine and soft hairs, not at all hirsute, 3 lines long, five-cleft scarcely to the middle; the *lobes lanceolate* or broadly linear, *obtuse* or obtusish. *Petals entirely glabrous* and beardless, narrowly spatulate, connected only at the very base, about one-third *longer than the calyx*. Filaments slender, half the length of the petals, monadelphous only at the base. Anthers oblong, two-celled, extrorse. Ovary very villous. Style filiform, sparsely arachnoid-villous, terminated by a simple and naked truncate stigma. Fruit utricular, hirsute-villous. Seed and embryo, as in *W. Americana*.

This is a more shrubby and branching plant than *W. Americana*, from which it is abundantly distinct, also, in its rounded and smooth leaves, its broader and blunter calyx-teeth, which are not hirsute, and its smooth petals. I have seen no other species with which it would particularly be compared, except *Waltheria Lophanthus* of Forster, which has silky-tomentose leaves, and is figured (in Char. Gen.) as having acute calyx-teeth, and a two-cleft style!

9. MELOCHIA, *Linn.*

1. Melochia (Riedleia) corchorifolia, *Linn.*

Melochia corchorifolia, Linn. Spec. p. 675. (Dill. Elth. p. 221, t. 176, f. 217.)
M. concatenata, Linn. Spec. l. c.; Cav. Diss. 6, t. 175, f. 2.
Riedleia corchorifolia & R. concatenata, DC. Prodr. 1, p. 491, 492.

Hab. Singapore. Baños, Luzon.

2. MELOCHIA (VISENIA) ODORATA, *Linn. f.*

M. foliis ovatis subcordatis serratis glabris vel glabellis; cymis ramulisque tomentulosis; floribus pallide purpureis; capsulæ hirsutæ coccis cuspidato-apiculatis; seminibus apice truncatis exalatis.

Melochia odorata, Linn. f. Suppl. p. 302; Forst. Prodr. Fl. Ins. Austr. p. 47; Cav. Diss. 6, p. 320, t. 173.
Riedleia odorata, DC. Prodr. 1, p. 491, excl. syn. Gmel. & Houtt.

HAB. Savaii, one of the Samoan Islands; common. A specimen is also ticketed "Tahiti;" perhaps by some transposition, since it is not alluded to in Dr. Pickering's notes, nor have any other collectors met with it in the Society Islands.

"A middle-sized tree." *Leaves ovate*, more or less acuminate, *subcordate*, or the smaller ones truncate or obtuse at the base, finely *serrate*, membranaceous in texture, *glabrous*, except a minute pubescence on the veins, or when young on the surfaces also, 3 to 5 inches long; the petioles 2 or 3 inches in length, minutely tomentose. Cymes axillary, compound, many-flowered, on peduncles longer than the petioles, which, like the branchlets, calyx, &c., are *minutely tomentose*. Petals spatulate, about twice the length of the calyx, "*pale purple*." Stamens nearly as long as the petals: filaments monadelphous only near the base, dilated or membranaceously winged for one-third of their length, and nearly the whole dilated portion adnate to the contracted base of the petal; the free upper portion filiform: anthers oblong, two-celled. Ovary five-lobed, five-celled, very hirsute: styles shorter than the stamens, hirsute towards the base. (Other individuals apparently produce shorter filaments and longer styles.) *Capsule hirsute*, ovoid, 3 or 4 lines long, deeply five-lobed, the 5 carpels *cuspidate-pointed* with the short and persistent base of the styles, partially septicidal; the carpels opening from the apex by both sutures. Seeds solitary or in pairs (superposed), a line and a half long, gibbous, with the smoothish testa conformed to the nucleus except at the narrowly membranaceous rhaphe, and at the chalaza, which is *truncate* and somewhat cellular-appendaged or thickened, but entirely *wingless:* the inner integument crustaceous. Embryo nearly straight.

The specimens accord with those collected by Mr. Barclay at Tanna, one of the habitats given by Forster.—This species and the following plainly show that *Visenia*, Houtt. (the *Glossospermum* of Wallich, and *Aleurodendron* of Reinwardt), cannot be generically distinguished from *Melochia*, and that even as a section it passes into *Riedleia.*

3. MELOCHIA (VISENIA) ARISTATA, Sp. Nov.

M. capsulis hirsutissimis, coccis acuminato-aristatis; seminibus subulato-apiculatis; cæt. fere præcedentis.

HAB. Upolu, one of the Navigators' or Samoan Islands.

This may prove to be no more than a variety of the preceding species, with which it nearly accords in foliage, &c.: but the *very hirsute capsules* are larger, and more *conspicuously awned* (the hirsute awns about 2 lines long); and the seeds bear a conspicuous *subulate appendage* at the apex, in place of the broad wing of the succeeding species. The specimen is in fruit, with only the remains of the flower at the base of the capsule. The filaments appear to be dilated and membranaceous for their whole length.

4. MELOCHIA (VISENIA) VITIENSIS, Sp. Nov.

M. foliis cordatis ovatis oblongisve glabris serratis; cymis pedunculisque tomentoso-puberulis; petalis flavis; capsulæ tomentoso-sericeæ coccis mucronatis; seminibus apice late alatis.

Var. *β. foliis subcoriaceis haud cordatis, superioribus basi acutis.*

HAB. Vanua-levu, Somu-somu, Ovolau, Oneata; and var. *β.* Muthuata, Feejee Islands. "A common shrub on the leeward coasts."

This is a variable species as to foliage, &c., unless possibly two or more are here confounded. The specimens from Ovolau, Oneata, and Vanua-levu very much resemble those of *M. odorata*, and have mostly membranaceous leaves, either *ovate* or *oblong-ovate*, and commonly subcordate. But, according to Dr. Pickering, the *petals* are *yellow;* the *capsules* are *silky-tomentose*, instead of hirsute, and merely *mucronate* with the persistent base of the styles; and the *seeds* are *conspicuously winged at the apex;* the broad and scarious wing being as long as or longer than the body of the seed. One fruiting specimen exhibits much larger and subulate-pointed capsules, which, however, are found on inspection to be in a diseased state. The specimens from Somu-somu have broadly ovate and truly *cordate* leaves, of a chartaceous texture. Those from Muthuata, here appended, with some misgiving, as a variety, have the leaves *almost coriaceous* in texture, very glabrous, broadly or narrowly *oblong*, or the uppermost lanceolate, acute at the base, *none of them cordate;* but the specimens do not exhibit many cauline leaves. The flowers also appear to be rather larger.

10. PTEROSPERMUM, *Schreb.*

1. PTEROSPERMUM DIVERSIFOLIUM, *Blume?*

HAB. Shores of Laguna, Baños, Luzon. — Leafy branches only, without flowers or fruit.

11. MELHANIA, *Forsk.*

1. MELHANIA LEPRIEURII, *Webb.*

Melhania Leprieurii, Webb, Spic. Gorgon. p. 111, t. 4, 5; Hook. Ic. Pl. t. 763, 755. *Brotera Leprieurii*, Guillem. & Perr. Fl. Seneg. p. 85.

HAB. St. Jago, Cape de Verde Islands.

ORD. TILIACEÆ.

1. ENTELEA, *R. Br.*

1. ENTELEA ARBORESCENS, *R. Br.*

Entelea arborescens, R. Br. in Bot. Mag. t. 2480; Hook. f. Fl. N. Zeal. p. 32.
Apeiba australis, A. Rich, Fl. Nouv. Zel. (Voy. Astrolabe) p. 301, t. 34.

HAB. Bay of Islands, New Zealand. (In fruit only.)

2. CORCHORUS, *Linn.*

1. CORCHORUS TORTIPES, *St. Hil.*

Corchorus tortipes, St. Hil. Fl. Bras. Mer. 1, p. 281, t. 55.

HAB. Rio Janeiro, Brazil.

2. CORCHORUS TRILOCULARIS, *Linn.*

HAB. St. Jago, Cape de Verde Islands.

3. CORCHORUS OLITORIUS, *Linn.*

HAB. Shores of Laguna, Baños, Luzon, Philippine Islands.

4. Corchorus Antichorus, *Rœuschel.*

Antichorus depressus, Linn. Mant. p. 64; Linn. f. Fasc. Pl. Rar. Hort. Ups. p. 8, t. 2; DC. Prodr. 1, p. 504.

Hab. Cape de Verde Islands.

5. Corchorus tridens, *Linn.*

Hab. Cape de Verde Islands; where it was also gathered by the late Dr. Vogel.

6. Corchorus capsularis, *Linn.*

Hab. Shores of Laguna, Baños, Luzon. (In fruit.)

3. TRIUMFETTA, *Plum.*

1. Triumfetta eriocarpa, *St. Hil.*

Triumfetta eriocarpa, St. Hil. Fl. Bras. Mer. 1, p. 288.

Hab. Rio Janeiro, and in the Organ Mountains, Brazil.

2. Triumfetta obscura, *St. Hil. l. c.*

Hab. With the foregoing. (Not in flower.)

3. Triumfetta rhomboidea, *Jacq.*

Triumfetta rhomboidea, Jacq. Stirp. Amer. p. 147, t. 90? Lindl. Collect. Bot. t. 29.

HAB. Near Obrajillo, in the lower Andes of Peru.

This is manifestly the plant figured by Lindley: but it may not be the same as the Caribbean plant.

4. TRIUMFETTA ANNUA, *Linn.*

Triumfetta annua, Linn.; Bot. Mag. t. 2296; Walp. Rel. Meyen. p. 310.
T. Indica, Lam. Dict. 3, p. 420? DC. Prodr. 1, p. 508?
T. trilocularis, "Roxb. ex Horn. Suppl. p. 140;" DC. l. c.

HAB. Vicinity of Manilla, Luzon. (The same as Cuming's No. 1462, from the Philippine Islands.)

5. TRIUMFETTA PROCUMBENS, *Forst.*

Triumfetta procumbens, Forst. Prodr. Fl. Ins. Austr. p. 35; Hook. & Arn. Bot. Beech. Voy. p. 60; Guillem. Zeph. Tait. p. 71.
T. Fabreana, Gaud. Bot. Voy. Freyc. p. 478, t. 102.

HAB. Eimeo and Metia, Society Islands. Savaii and Manua, Samoan Islands. Ovolau, Feejee Islands. Rurik, Gardner's, and Binney's Islands. A maritime species.

The MS. description of Forster, now printed by Guillemin, with the character published by Hooker and Arnott, above-cited, give a good account of this widely diffused South Sea species, to which the *T. Fabreana* of Gaudichaud doubtless also belongs. In character it is intermediate between DeCandolle's two sections. The globose and strongly echinate fruit varies considerably in size.

4. GREWIA, *Juss.*

1. GREWIA MALLOCOCCA, *Linn. f.*

Mallococca crenata, Forst. Char. Gen. p. 77, t. 39, & Nov. Act. Ups. 3, p. 185.
Grewia Mallococca, Linn. f. Suppl. p. 409; Forst. Prodr. p. 62; Cav. Ic. t. 309; Guillem. Zeph. Tait. p. 70, cum descr. Forst.

G. tiliæfolia, A. Rich. Sert. Astrolab. introd. p. 9, non Vahl.
G. Richardiana, Walp. Repert. Bot. 1, p. 363.
G. Amicorum, Steud. Nomencl. Bot.

HAB. Tongatabu, Friendly Islands. Vanua-levu, Feejee Islands.

The petals are ovate-lanceolate and acute, the circular nectary at their base surrounded by a dense villous ring; the nearly entire margin of the turbinate disk or torus equally villous. Stigma two-parted, the divisions somewhat two-lobed or laciniate. The leaves vary from ovate-oblong to oblong-lanceolate, and are barely subcordate; their upper surface is either slightly scabrous or smooth. The margins of the sepals, as in the following species, are induplicate in æstivation.

2. GREWIA PERSICÆFOLIA, Sp. Nov.

G. glabra; foliis oblongo-lanceolatis acuminatis subserratis basi obtusa tantum trinerviis laxe venosis membranaceis; pedunculis axillaribus solitariis petiolo sublongioribus bi–trifloris; pedicellis pedunculo æquilongis; petalis minimis? toro apice villoso-barbato; fructu hirsutulo.

HAB. Ovolau, Feejee Islands.

Shrub *glabrous*, or the branchlets, petioles, &c., slightly puberulent. *Leaves oblong-lanceolate*, or some of them oblong, from 3 to 6 inches in length, and one or 2 inches in width, *acuminate*, usually tapering gradually from above the middle to the apex, finely and mostly obscurely or repandly *serrate* with obtuse teeth, thin and *membranaceous* in texture, of the same green hue both sides, pinnately veined with 4 or 5 primary veins on each side, besides a rather stronger pair at the obtuse base, therefore *three-nerved at the base only;* the veins connected by rather loose and inconspicuous transverse and reticulated veinlets. Petioles 4 to 6 lines long. *Peduncles axillary* and *solitary*, half an inch long, slender, 2–3-*flowered; the pedicels as long as the peduncle;* the bractlets, if any, caducous. The sepals, petals, &c., have fallen or have been destroyed. There are vestiges, however, of linear and three-nerved sepals, smaller than those of *G. Mallococca*, and of *very small? petals.* The top-shaped *torus* is *villous-bearded* at the undulate margin, but less so than in the foregoing species. Ovary densely hirsute-villous. Stigma not seen. *Fruit sparsely hairy*, much as in *G. Mallococca*, four-lobed.

Manifestly related to *Grewia glabra*, Blume, or at least to No. 1016 of Zollinger's Java collection, which accords with Blume's character; but that has more decidedly three-nerved leaves, with more conspicuous transverse veinlets, and less hairy fruit. *G. lævigata*, Vahl. has glabrous fruit and longer peduncles.

3. GREWIA PRUNIFOLIA, Sp. Nov.

G. glabra; foliis ovato-oblongis seu oblongo-lanceolatis acuminatis serrulatis basi rotundata trinerviis supra nitidis; pedunculis axillaribus uni–trifloris; petalis ovalibus obtusis, nectario linea pubescente cincto; toro apice pubescente; stigmate crasso peltato; fructu hirsutulo.

HAB. Ovolau and Muthuata, Feejee Islands; "a common shrub on the leeward coasts."

Shrub *glabrous*, except a minute pilose pubescence on the slender branchlets, petioles, &c. *Leaves ovate-oblong*, ovate, or on young branches *oblong-lanceolate*, *acuminate*, from one to 2 or 3 inches in length, therefore small for this genus, finely and rather sharply *serrulate*, chartaceous rather than membranaceous in texture, *three-nerved barely at the rounded base*, and loosely pinnately veined, as in the preceding species, glabrous on both sides, shining above. Petioles 3 or 4 lines long. *Peduncles axillary*, 1–3-*flowered*, short. Bractlets minute and caducous. Flowers smaller than those of *G. Mallococca*. Sepals canescent externally, obscurely five-nerved. *Petals oval*, *obtuse*, about a line and a half long, shorter than the stamens, canescent externally towards the base, the lower half occupied by the roundish *nectary*, which is *surrounded by a finely pubescent line*. Torus turbinate, finely *pubescent at its apex*. Ovary hirsute. Style thickish, columnar, terminated by a large and *thick peltate stigma*, which appears to be entire, but when macerated is seen to be fringed or dissected into many minute and densely matted lobes. Fruit smaller than in *G. Mallococca*, sparsely *hirsute*, four-lobed.

From Fulanga, Feejee Islands, there is a single fruiting specimen, possibly of a different species, with larger, crenately toothed leaves.

5. DICLIDOCARPUS, Nov. Gen.

Flores polygamo-dioici? Calyx tribracteolatus, pentaphyllus; sepalis crassis æstivatione valvatis. Petala 5, inappendiculata, æstivatione imbricata. Discus hypogynus, annularis, crenatus. Stamina creberrima, distincta (fl. fert. pauciuscula effœta?): antheræ biloculares. Ovarium sessile, oblongum, biloculare, pilis parcis circumdatum, stigmate sessili retuso coronatum, multiovulatum, fl. masc. effœtum sæpissime exovulatum. Capsula latissime obcordato-rhomboidea, bilocularis, dissepimento contrarie compressa, marginibus alata, ab apice loculicide bivalvis, polysperma. Semina lenticulari-globosa, hinc impressa, margine pilis prælongis crinita; testa fragili laxa. Embryo albumine carnoso vix brevior; cotyledonibus orbiculatis planis radicula æquilongis.—Arbor, foliis ovalibus integerrimis, stipulis caducis, floribus in cymulis axillaribus parvis.

1. Diclidocarpus Richii, Sp. Nov. (Tab. 14.)

Hab. Ovolau, and Vanua-levu, at Sandal-wood Bay, Feejee Islands.

"Tree about 40 feet high." Branchlets, &c., pulverulent with a minute stellular pubescence, terete, annulate with the scars of the fallen stipules. *Leaves* alternate, *oval*, *entire*, obtuse, or usually with a minute and abrupt acumination, rounded or rarely slightly subcordate at the base, 2 to 3½ inches long, and 1½ to 2½ inches wide, chartaceous, prominently feather-veined, three-ribbed at the base, the principal veins connected by transverse veinlets, green, scarcely paler underneath, glabrous to the naked eye, under a lens finely dotted with a minute stellular pubescence, especially beneath and on the midrib and veins; the latter more or less bearded in their axils. Petioles about half an inch long. *Stipules* oblong, acute, *caducous*. *Flowers polygamo-diœcious*, or perhaps monœciously polygamous, very *small*, crowded in small axillary cymes; the inflorescence and exterior of the calyx tomentose-puberulent. *Sterile flowers.* Peduncle shorter than the petiole, twice or thrice dichotomous; the forks subtended by a pair of oblong bracts. Pedicels articulated, not longer than the calyx. *Calyx calyculate with an involucel of* 3 *bractlets*, globose in the bud; the *sepals very thick* and coriaceous, triangular-ovate, *valvate* in æstivation, deciduous. *Petals* 5, *not appendiculate, hypogynous*, broadly obovate, minutely veiny (only seen in the buds), *imbricated in æstivation. Stamens very numerous, crowded* in a globular mass, inserted on the flat summit of a depressed receptacle, which is not at all elevated, but its margin is slightly produced into an obscurely five-crenulate border or hypogynous disk: filaments *distinct*, not longer than the ovary: *anthers two-celled*, linear-oblong; the cells opening longitudinally. *Ovary sterile, oblong*, sessile, glabrous, somewhat compressed, surrounded by some long *hirsute hairs*, which are more or less intermixed with the inner stamens (nearly as in *Muntingia*), and are almost as long as their filaments, *two-celled, destitute of ovules*: style none: *stigma sessile, retuse* or two-lobed. *Fertile flowers* scarcely known: a single apparently hermaphrodite flower exhibited a nearly similar calyx, corolla, &c., fewer stamens, and a broader ovary, with the cells containing many minute ovules. The truly fertile, pistillate flowers probably unknown. Inflorescence of the fruiting specimen nearly as in the sterile, but with longer peduncles. *Capsule dilated-rhomboidal and emarginate, or somewhat obcordate, two-celled, compressed contrary to the partition*, puberulent, between ligneous and coriaceous in texture; the rather turgid body of the fruit extended all round, except at the base, into a firm wing of 3 or 4 lines in width: it is *loculicidally dehiscent* at maturity through the wing from the apex downwards, thus opening like a bivalve shell. The length of the pod is about an inch; the width about one-fourth larger. *Seeds very numerous* in each cell, horizontal, *lenticular-globose*, a line broad, on a short funiculus, which separates by a clean scar from the placenta, and remains attached to the excised or subcordate hilum: the testa thin and fragile, cellular, in the dried specimens loose, and as it were inflated and detached from the smooth and ovoid crustaceous tegmen, except on the dorsal face of the seed, where it is reduced to an adnate pellicle, or apparently disappears abruptly, leaving a broadly oval depression on that side (fig. 18, 20): it is naked on both sides, but the rounded *edges* are throughout *beset with* a continuous tuft of *very long and soft hairs. Embryo* axile, straight, *nearly as long as the fleshy albumen; the cotyledons flat, nearly orbi-*

cular, thickish: radicle about the length of the cotyledons, pointing to the hilum.

The pod of this remarkable new Tiliaceous genus bears no slight resemblance to some bivalve shell; which has suggested the name, composed of δικλὶς, *a double door*, and καρπὸς, *fruit*. The specific name is in honour of the Botanist of the Expedition, Mr. Rich, who had indicated it as a new genus. The drawings from which the engraving is executed, were in part made under his superintendence, by the lamented Mr. Agate.

PLATE 14.—DICLIDOCARPUS RICHII. Fig. 1. Branchlet of the sterile plant with flower buds, of the natural size. 2. A fruit-bearing branchlet, of the natural size. 3. Portion of the lower surface of a leaf, magnified, to show the minute stellular pubescence. 4. A cymule from fig. 1, magnified. 5. Diagram (transverse section of the flower with its three bractlets). 6. Vertical section of a flower-bud of a sterile flower. 7. The calyculus of three bractlets, detached. 8. Flower-bud with the calyculus and calyx removed, one of the sepals also shown. 9. A petal from the same. 10. The globular cluster of stamens, seen after the petals are removed. 11. Vertical section of the pistil of a perfect? flower, and the receptacle, with two of the stamens and some of the hairs that surround the ovary left in place. 12. A (fertile?) pistil, with the receptacle and some of the hypogynous hairs. 13. A sterile pistil, &c.—All these details variously magnified. 14. A dehiscent capsule, of the natural size. 15. Transverse section of a capsule. 16. One of the valves of the capsule, seen from within, with the seeds. 17. A seed with its persistent funiculus seen on the ventral side, enlarged. 18. Dorsal view of the same. 19. Vertical section of the same. 20. A seed transversely divided. 21. The embryo, magnified.

6. ELÆOCARPUS, *Linn.*

1. ELÆOCARPUS (MONOCERA) CYANEUS, *Sims.*

Elæocarpus cyanæus, Sims, Bot. Mag. t. 1737; DC. Prodr. 1, p. 519.
E. reticulatus, Smith; Ker. Bot. Reg. t. 657.

HAB. Vicinity of Newington, New South Wales. (In flower.)

2. ELÆOCARPUS (MONOCERA) PETIOLATUS.

Monocera petiolata, Jack, Malay. Misc. & in Hook. Bot. Misc. 2, p. 86.

Var. *β. petiolis brevioribus (haud ultra bipollicaribus)*.

HAB. Singapore. (A form with shorter petioles than ordinary.)

3. ELÆOCARPUS (MONOCERA) GRIFFITHII, *Wight*.

Monocera Griffithii, Wight, Ill. Ind. Bot. 1, p. 84; Walp. Repert. 1, p. 365.
Monocera paniculata, Wall. Cat.

HAB. Singapore.

4. ELÆOCARPUS (ACRONODIA ?) LAURIFOLIUS, Sp. Nov.

E. glaber; foliis coriaceis oblongis subserratis utrinque acutis vel subacuminatis supra nitidis; racemis axillaribus brevibus paucifloris; floribus diclinis, masculis perianthio pentamero; petalis laciniatis; antheris vix apiculatis plurimis.

HAB. Feejee Islands.

The single specimen of this plant which exists in the collection (without any indication of its particular locality) is a stout branchlet of a shrub or tree, entirely *glabrous*, with some *short* and *few-flowered racemes* from the axils of the leaves of the preceding year (which have principally fallen), bearing unexpanded flowers, of which those examined are staminate only, showing no trace of a pistil. From its *diclinous* flowers it may be allied to Blume's genus *Acronodia*, which this author describes as diœcious, and of which he knew only the staminate plant (although, indeed, Hasskarl, in Pl. Jav. Rar. p. 323, has recently characterized the flowers as hermaphrodite): but, otherwise, it appears not different from *Elæocarpus*. The leaves are crowded on the branch, alternate, *coriaceous*, *oblong*, 2 to nearly 4 inches long, an inch or more in width, remotely and rather *obscurely serrate*, acute or *tapering to both ends*, the base truly acute, the apex acuminate with a blunt point, pinnately veined, and with reticulated veinlets, paler beneath, shining above. Petioles half an inch long. Racemes simple; the peduncle longer than the petiole. Pedicels 3 lines long. Flower-buds globular-ovoid. *Sepals* 5. *Petals* 5, small, ovate, *laciniate* into 5 or 7 acute lobes, glabrous (except a few minute silky hairs externally); their margins induplicate in æstivation and folded round a cluster of the stamens. Receptacle pilose. Stamens more than 20: filaments very short: *anthers* linear, sparsely pilose with long hairs, *slightly apiculate* or mucronate. Lying loose with the specimen is an oval dry drupe, of 4 or 5 lines in length, one-celled, one-seeded, its surface pubescent under a lens.

5. ELÆOCARPUS CASSINOIDES, Sp. Nov.

E. glaber; foliis coriaceo-chartaceis obovatis denticulatis leviter penninerviis; racemis axillaribus; drupa pyriformi.

HAB. Tonga or Friendly Islands. Sandal-wood Bay, Feejee Islands.

The specimens of this shrub or tree bear ripe fruit only: the flowers are unknown. Those from the two localities, as ticketed, are so exactly alike that they might have been taken from the same stem, and, since the habitats are not to be verified from Dr. Pickering's notes, one or the other may be considered doubtful. The branches, foliage, &c., are perfectly *glabrous*. *Leaves between coriaceous and chartaceous* in texture, very smooth, *obovate*, obtuse, about 2 inches long and an inch and a quarter wide, sparingly *denticulate* or serrulate above the middle, tapering at the base into a petiole of 3 or 4 lines in length, both sides coloured alike, pinnately veined with 3 or 4 pairs of slender and inconspicuous veins. *Racemes* (or perhaps short and leafy flower-branches) *axillary* from the axils of the leaves of the preceding year, apparently as long as the leaves, several-flowered. *Drupe pear-shaped*, 7 lines long, on pedicels of 2 lines in length, smooth, with a thin pulp, apparently blue or purple when fresh: putamen very thick, bony, one-celled, one-seeded. Seed and embryo as in the genus.

6. Elæocarpus pyriformis, Sp. Nov.

E. subglaber; foliis membranaceis ellipticis utrinque obtusissimis serrulatis perspicue penninervis; racemis axillaribus; drupa pyriformi.

Hab. Sandal-wood Bay, Vanua-levu, Feejee Islands.

"Tree with a rough bark." Branchlets and petioles minutely pubescent. Leaves crowded, alternate, *glabrous*, or when young minutely puberulent on the prominent midrib, *membranaceous*, nearly of the same hue both sides, *elliptical*, rounded and *very obtuse at both ends*, rather sharply and copiously *serrulate* quite to the base, 2 to 2½ inches long, about an inch and a half wide, *prominently feather-veined;* the primary veins 5 or 6 pairs, slender but salient underneath, occasionally with a gland in their axils, and more commonly with one in their forks towards the margin of the leaf. Petioles 1½ to 3 lines long. Flowers unknown; the specimens bearing only ripe fruit: they were evidently borne in short *axillary racemes*, from axils of the leaves of the preceding year. *Drupes pear-shaped*, 6 to 8 lines long, on pedicels of barely 2 lines in length, nearly smooth, with a thin pulp, and a very thick and bony putamen, one-celled, one-seeded. Seed and embryo as in the genus.

This is nearly related to the foregoing species, and has a similar fruit; but the leaves are different. Both must rank as species of *Elæocarpus* until the flowers are known.

7. Elæocarpus (Beythea) bifidus, *Hook. & Arn.*

Elæocarpus bifidus, Hook. & Arn. Bot. Beech. Voy. p. 110, t. 24.
Beythea bifida, Endl.; Walp. Repert. 1, p. 365, & 5, p. 121.

Hab. Kaala Mountains, behind Honolulu, Oahu, Sandwich Islands. (Also gathered by Macrae, Lay & Collie, Nuttall, &c.)

Following Arnott's suggestion, Endlicher established a separate genus for this species; but apparently on insufficient grounds. All gradations are now known to occur in species of *Elæocarpus* between laciniate-dissected, 2–3-lobed, and even quite entire petals. The ovules, indeed, are said by Endlicher to be numerous; but there are only 4, or possibly 6, in each of the two cells. The anthers are as in *Elæocarpus* proper, except that the valves open to a greater extent. The style, however, although undivided and two-grooved, is bipartible. The drupe, although ovoid when young, is nearly globose when ripe; the putamen, which is not very thick, is one-celled and one-seeded. Embryo not seen.

ORD. TERNSTRŒMIACEÆ.

1. DRAYTONIA, Nov. Gen.

Calyx ebracteolatus, quinquepartitus, imæ basi ovarii tantum accretus, persistens; sepalis inæqualibus æstivatione imbricatis. Petala 5, obovata, æstivatione convoluta vel convoluto-imbricata. Stamina plurima; filamentis basi dilatatis breviter monadelphis: antheræ biloculares, dorso affixæ incumbentes, loculis apice rima introrsa hiantibus. Ovarium triloculare (rarius 4–5-loculare): stylus unicus: stigma obtuse trilobum. Ovula in placentis incrassatis, e loculorum angulo centrali prominentibus plurima, anatropa. Capsula subcarnosa, trilocularis (rarius 4–5-locularis), apice loculicide trivalvis? loculis polyspermis. Semina reticulato-scrobiculata. Embryo in axi albuminis carnosi, ejusdem dimidio brevior, subcylindricus; cotyledonibus brevibus semiteretibus.—Arbuscula Sauraujæ *facie.*

1. Draytonia rubicunda, Sp. Nov. (Tab. 15.)

Hab. Banks of shaded mountain streams, Ovolau, Feejee Islands.

Shrub or small tree 10 to 20 feet high; the branchlets, petioles, veins of the leaves, &c., thickly beset with ferrugineous chaffy scurf when young, otherwise glabrous. Leaves alternate, crowded towards the ends of the branches, chartaceous in texture, oblong, more or less acute at both ends, 4 to 7 inches long, and 1½ to 2½ inches wide, acutely serrulate, pinnately veined from a strong midrib, and underneath reticulated between the veins; the areolæ of the veinlets oblong and transverse. Petioles an inch or more in length. Leaf-buds naked: vernation of the leaves conduplicate. Peduncles axillary, as long as the petioles, or shorter, bearing a several-flowered corymb-like cyme. Pedicels minutely bibracteolate about the middle, half an inch long. *Calyx not bracteolate*, deeply *five-parted*, its very base adnate to the base of the ovary, otherwise free, *persistent:* the sepals somewhat chartaceous, *unequal* (the two exterior smaller), roundish-ovate, concave, quincuncially *imbricated in æstivation. Petals* 5, *obovate*, entire, longer than the sepals, 3 or 4 lines in length, "red," distinct, subperigynous, convolute, or oftener convolute-imbricated (one petal being exterior as in *Saurauja*) in æstivation, tardily deciduous. *Stamens numerous* (40 or more), inserted with the petals, but not adnate to them, scarcely half the length of the corolla: filaments subulate, *their dilated bases monadelphous* into a short ring: anthers oblong, *two-celled*, *fixed by their back* near the base to the apex of the filament, therefore *incumbent*, destitute of a manifest connective; the cells slightly recurved, separate at the apex, *opening from the apex* downward by a long *introrse chink*, extending quite to the middle of the cell. Pollen-grains simple, oval. There is no manifest disk. *Ovary three-celled* (rarely 4–5-celled), globular. *Style single*, columnar, longer than the stamens, terminated by a subcapitate *three-lobed stigma. Placentæ* 3, *thickened* and fleshy, projecting from the axis into the cavity of the cells; the surface thickly covered by the *numerous anatropous ovules.* Capsule globose, invested by the persistent calyx, about 3 lines in diameter, glabrous, reddish, *three-celled* (rarely 4–5-celled), with their dissepiments *rather fleshy* in texture and inclining to baccate, but apparently opening *loculicidally* at the apex at full maturity: the cells nearly filled by the large and fleshy or pulpy placentæ. *Seeds very numerous* and crowded on the surface of the placentæ, obovate or globular, somewhat angled by mutual pressure; the testa very strongly *reticulate-pitted*, conformed to the nucleus: inner integument thin. *Embryo* nearly cylindrical in the axis of the fleshy albumen, occupying about half its length, straight: radicle next the hilum: *cotyledons short, semiterete.*

The tissue of the placentæ is replete with acicular crystals (raphides): but I have not observed them in the seed-coats, where, according to Mr. Bennet, they abound in *Saurauja.*

This quite "ornamental plant" is nearly allied to the genus *Saurauja*, principally differing from it, indeed, in the union of its styles into one. The prevailingly trimerous pistil, the cohesion of the very base of the calyx with the base of the ovary, and the want of a hypogynous disk, are subsidiary characters; which decide us to establish a distinct genus for our plant, even if we do not thus separate *Malachodendron* from *Stuartia.* The discovery of a plant so exactly like *Saurauja*, but with united styles, is particularly interesting from its bearing on the affinities of that genus, which has always been considered as a somewhat paradoxical member of the order *Ternstrœmiaceæ*, Dr. Lindley having even proposed its transference to the *Dilleniaceæ*;* and Dr. Planchon† having indicated some striking points of resemblance with *Clethra.* The first-mentioned view, at least, which was probably suggested by the distinct styles of *Saurauja*, along with a certain similarity in the foliage, is set aside by the plant now made known.

With much satisfaction I dedicate this genus to Joseph Drayton, Esq., the principal of the scientific artists of the Expedition, of no small attainments in natural history, especially in Conchology, to whose pencil and superintendence the illustrations of the whole invertebrate Zoology of the Expedition owe their high perfection.

PLATE 15.—DRAYTONIA RUBICUNDA: a branch, of the natural size, with flowers and fruit. Fig. 1. Portion of the deciduous chaffy scurf,

magnified. 2. Diagram of the flower, in a transverse section. 3. Flower, seen from below. 4. The same, seen from above. 5. Vertical section of the pistil, with the base of the calyx, corolla, &c. 6. A portion of the ring of stamens. 7. Apex of the style and stigma, more magnified than in fig. 5. 8. Fruit, surrounded by the persistent calyx. 9. Transverse section of the fruit. 10. A seed. 11. Vertical section of the same. 12. Embryo, detached.—All the dissections variously magnified.

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* The Vegetable Kingdom, in loco.

† In Hooker's London Journal of Botany, 5, p. 253.

2. TERNSTRŒMIA, *Mutis.*

1. TERNSTRŒMIA BRASILIENSIS, *Camb.*

Ternstrœmia Brasiliensis, Cambess. in St. Hil. Fl. Bras. Mer. 1, p. 298, t. 59

HAB. Near Rio Janeiro, Brazil; the var. MINOR.

3. EURYA, *Thunb.*

1. EURYA? SANDWICENSIS, Sp. Nov.

E. ramulis ultimis strigillosis; foliis ellipticis oblongisve basi subcordatis creberrime serrulatis reticulatis; floribus (masculis) in axillis solitariis nutantibus 10–15-*andris.*

HAB. Sandwich Islands: on mountains, behind the town of Honolulu, Oahu: also in forests, on the side of Mouna Kea, Hawaii. (Gathered at Oahu by Macrae and Gaudichaud.)

Apparently a large shrub, much branched; the branches crowded with leaves; the *ultimate branchlets strigosely hairy. Leaves elliptical or oblong*, coriaceous, varying from one to 2½ inches in length, and from half an inch to an inch in width, mostly obtuse or rounded at the apex, more or less *cordate* at the base (the smaller slightly so), *closely serrulate* throughout with inflexed mucronulate teeth, numerously and closely feather-veined, and with the veinlets finely *reticu-*

lated underneath, glabrous, or the midrib strigillose underneath, on distinct petioles of only a line and a half in length, or sometimes sessile and the leaf appearing as if partly clasping. Only one kind of flowers seen: these appear as if hermaphrodite, but their ovary is destitute of ovules. The *flowers* are *solitary in the axils* of the much-crowded leaves, on ebracteolate pedicels of from 3 to 5 lines long, mostly *nodding*, large for the genus, being 3 or 4 lines in length. Calyx scarcely puberulent, brownish, subtended by two small bractlets at the base: sepals 5, unequal (the exterior smaller), coriaceous, orbicular, imbricated, persistent. Corolla pale yellow, hypogynous, nearly twice as long as the calyx; the petals 5, united at the base, imbricated, obovate, thickish. *Stamens* 10 or 15, hypogynous, or very slightly if in the least adnate to the base of the corolla: filaments distinct, short, subulate: anthers oblong-linear, mucronulate, longer than the filaments. Ovary (sterile) three-celled; the cells not ovuliferous: styles as long as the stamens, united at the base, or separate, or two of them united: stigma subcapitate.

Until the fertile flowers or the fruit are known, we cannot be certain that this is a true *Eurya;* but it probably is so.

2. EURYA VITIENSIS, Sp. Nov.

E. glaberrima; foliis lanceolato-ellipticis oblongisve utrinque acuminatis serrulatis supra nitidis; floribus plerisque geminis, masculisve (10-*andris*) *fasciculatis; sepalis orbiculatis; stylis* 3 *vel* 4 *brevissimis fere discretis; fructu globoso.*

HAB. On the summit of a mountain of Ovolau, one of the Feejee Islands, at an altitude of 2,000 feet.

Shrub (or small tree?) *very glabrous*, even to the ultimate branchlets; or these slightly and minutely pubescent, when very young, in the specimens with male flowers. *Leaves lanceolate-elliptical, oblong*, or oblong-lanceolate, rather crowded on the angled branches, tapering or *acuminate* at both ends, coriaceous, *serrulate* with callous teeth, 1½ to 2 inches long, 8 to 10 lines wide, smooth and *shining above*, dull but scarcely paler underneath: petioles 2 lines long. *Flowers* diœcious, very small (the buds about a line in diameter), axillary; the fertile ones mostly *in pairs*, rarely in threes, sometimes solitary; the staminate often *in clusters* of 3 or 4 or more in the same axils. Pedicels of the fertile flowers 1½ to 2 lines in length; of the sterile shorter, not so long as the flowers. Calyx minutely 1–2-bracteolate; the 5 *sepals orbicular*, imbricated. Corolla yellowish, rather longer than the calyx; the petals 5, oval or obovate, a little united at the base. Staminate flowers with an abortive rudiment in place of a pistil, *decandrous*. Filaments distinct, free or nearly so from the corolla. Anthers oblong, scarcely as long as the filament, obtuse, very minutely apiculate under a lens. Pistillate flowers destitute of any rudiments of stamens. Ovary globose, glabrous, four-celled, sometimes three-celled, with numerous downwardly imbricated ovules in each cell. *Styles 3 or 4, very short, nearly distinct* to the base: stigmas introrse, subcapitate. *Fruit globose*, barely a line in diameter, a little longer than the persistent calyx, dry, crustaceous, indehiscent; the cells several-seeded.

This species in foliage resembles *Eurya nitida* of Korthals (in Verhand. Naturl. Gesch. Nederl. Overzeesch. Bezitt. p. 115, t. 17), from Borneo; but that has cuspidate-pointed anthers, an ovoid and pointed ovary with much fewer ovules, a larger fruit, and longer styles, which are united for more than half their length.

Subgen. EURYODES.—*Flores masculi pentandri, rarius hexandri.* (*Samoënses, floribus subsessilibus solitariis.*)

3. EURYA (EURYODES) PICKERINGII, Sp. Nov.

E. glaberrima; foliis obovatis seu ovalibus basi acutis crebre serratis coriaceis supra nitidis.

HAB. Tutuila, one of the Samoan or Navigators' Islands; on mountains, at an elevation of about 2,000 feet.

Shrub "4 to 10 feet high," *very glabrous;* the ultimate branchlets scarcely if at all pubescent, even when young. *Leaves obovate*, oblong-obovate, or *oval, acute at the base*, obtuse or obtusely pointed, *closely* *serrate* with inflexed callous teeth, 2 to 2½ inches long, thick and *coriaceous*, the *upper surface shining*, much resembling those of *Thea*. *Flowers solitary* in the axils, *subsessile*, small and inconspicuous; the sterile *pentandrous*. Sepals round-ovate, mucronulate, coriaceous. Petals broadly ovate. Fruit globose, dry, indehiscent, smooth, much larger than the calyx, 2 lines in diameter, 4–5-celled. Seeds several in each cell, globular-reniform, with a cellular scrobiculate-reticulated testa. Embryo curved, in the axis of fleshy albumen.

The specimens of this and the subjoined species afford only scanty materials for elucidating their floral characters. This, however, furnishes some mature fruit; the other has male flowers. Both appear to differ from *Eurya* only in the reduction of the stamens to five, or at most to six. This single character probably should not suffice to separate them from that genus, several species of which are only decandrous.

4. Eurya (Euryodes) Richii, Sp. Nov.

E. foliis oblongo-lanceolatis serrulatis, novellis subtus (præcipue ad costam) ramulisque ultimis pilosulis.

Hab. Upolu, one of the Samoan or Navigators' Islands.

A shrub, much like the preceding; but the young branchlets and the lower surface of the young leaves are *pilose* with slender and silky fine hairs, which are mostly persistent on the midrib. The leaves, too, are much narrower, being *oblong-lanceolate*, 2 to 2½ inches in length by 6 to 10 lines in width, more finely *serrulate*, less coriaceous, and the upper surface not so shining. Flower-buds silky-pubescent externally, solitary (rarely, perhaps, in pairs) and almost sessile in the axils of the leaves, a line and a half in length; the sepals and petals broadly ovate. Stamens 5 (or in one instance 6), wholly free from the corolla: filaments very short: anthers linear-sagittate, mucronate. A mere subulate rudiment takes the place of the pistil in the staminate flowers. The fertile flowers have not been noticed.

4. PLOIARIUM, *Korth.*

1. Ploiarium elegans, *Korth.*

Ploiarium elegans, Korthals, Verhand. Naturl. Geschied. Nederl. Overzeesch. Bezitt. Bot. p. 185, t. 25.

Hab. Singapore: in fruit. Perhaps not indigenous. But no memoranda are extant relating to the Singapore and Philippine collections.

5. LAPLACEA, *H. B. K.*

1. Laplacea semiserrata, *Camb.*

Laplacea semiserrata, Cambess. in St. Hil. Fl. Bras. Mer. 1, p. 300.
Hæmocharis semiserrata, Mart. & Zucc. Nov. Gen. & Spec. Bras. 1, p. 107 t. 67.

Hab. Organ Mountains, near Rio Janeiro, Brazil.

6. CALPANDRA, *Blume.*

1. Calpandra lanceolata, *Blume.*

Calpandra lanceolata, Blume, Bijdr. p. 178; Korthals, Verhand. Nederl. p. 148, t. 31.

Hab. Mountains near Baños, Luzon, Philippine Islands.

The specimens, which consist of leafy branches, bearing flower-buds, with a portion of a half-grown fruit, so perfectly accord with the excellent figure and analyses given by Korthals, as to leave no doubt of their belonging to the same species. The genus manifestly belongs to the *Ternstrœmiaceæ*.

7.? ARISTOTELIA, *L'Her.*

1. Aristotelia Maqui, *L'Her.*

Hab. Chili, near Valparaiso. (A fragment in flower only in the collection.)

Ord. GUTTIFERÆ.

1. ARRUDEA, *Camb.*

1. Arrudea clusioides, *Camb.*

A. foliis obovatis; stigmatibus radiantibus 8; *capsula octoloculari octovalvi, loculis* 3–4-*spermis.*

Arrudea clusioides, Cambess. in St. Hil. Fl. Bras. Mer. 1, p. 319, t. 66.

Hab. Organ Mountains, near Rio Janeiro, Brazil.

A small tree, with wholly the aspect of *Clusia*, except in the greater number of (imbricated) parts in the calyx and corolla; the *obovate leaves* about 4 inches long. In respect to the flowers, there is nothing to add to the figure and description of Cambessedes, above cited, except that there is no distinct style, at least in the fertile flowers.

Calyx persistent. Petals tardily deciduous. *Ovary eight-celled*, eight-lobed, crowned with as many *radiated stigmas:* these are distinct, tongue-shaped, large, strongly reflexed, and of a fleshy texture: the cells, in specimens which are considerably enlarged after flowering, are all destitute of ovules, as was the case in St. Hilaire's specimens. The flowers are undoubtedly polygamous. We have, however, a ripe pod, from which the character may be completed, as to the fruit and seeds. *Capsule eight-celled*, globose-ovoid, an inch in length, septicidally *eight-valved;* the valves margined by thin dissepiments, separating from the thickened axis which bears the 8 persistent and projecting placentæ, cartilaginous (the exocarp fleshy when fresh?), each tipped on the back, just below the summit, with the vestiges of the reflexed stigma. *Seeds* 3 *or* 4 *in each cell*, in a single series, enclosed in pulpy matter, cylindrical-oblong, slightly arcuate, 3 lines in length; the testa chartaceous, loose; the inner integument membranaceous, lineate with resinous vittæ, conformed to the oblong-linear nucleus, which consists of an embryo, the parts of which are not readily distinguishable.

The genus was founded on a specimen of the present plant, with flowers which, although apparently hermaphrodite and perfect, were found to have the cells of the ovary destitute of ovules. The fruit is only now made known. Meanwhile a second species, gathered by Splitgerber and Focke, in Surinam, and briefly indicated by the former, under the name of *Arrudea purpurea*, has been fully described by Miquel, in Linnæa, 18, p. 229–232, who has recast the character of the genus from the new materials. *A. purpurea* is described as having a pentamerous pistil (with 5 stigmas and 5 cells to the ovary), and numerous seeds, occupying several series in each cell of the fleshy five-valved capsule. Hence Prof. Miquel inclines to doubt whether *A. clusioides* has truly an octomerous ovary, with few-ovuled cells (the latter character having been inserted on the strength of a MS. note made by St. Hilaire in Brazil). I am enabled to confirm both these points. I have not seen the ovules, however; but they can hardly be numerous, since there are only three, or at most four, seeds in each cell of the single pod which the present collection affords. The calyx in *A. purpurea* is said to be deciduous: in *A. clusioides* it persists at the base of the capsule; or at least the exterior scaly envelopes are persistent.

2. CLUSIA, *Linn.*

1. Clusia lanceolata, *Camb.*

Clusia lanceolata, Cambess. in St. Hil. Fl. Bras. Mer. 1, p. 318.

Hab. Near Rio Janeiro, Brazil. (In fruit.)

2. Clusia Ganabarica, *Casaretto.*

Clusia Ganabarica, Casaretto, Nov. Stirp. Bras. Dec. no. 63; Walp. Repert. 5, p. 144.

Hab. Near Rio Janeiro. (In flower.)

3. Clusia rupicola, *Casaretto, l. c.?*

Hab. Organ Mountains, Brazil. (In flower.)*

3. DISCOSTIGMA, *Hassk.*

Discostigma, Hasskarl, Cat. Hort. Bogor. no. 212, & Pl. Jav. Rar. p. 276; Endl. Gen. Suppl. 3, p. 95.

1. Discostigma Vitiense, Sp. Nov. (Tab. 16.)

D. foliis subaveniis; floribus (fœminis) in axillis solitariis geminisve; pedicellis bibracteolatis.

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* *Clusia sessilis*, Hook. & Arn. Bot. Beech. Voy. p. 80 (non Forst.), from the Sandwich Islands, is a Rutaceous plant, to be described under that order, in this work. Moreover the original *Clusia sessilis* of Forster, from Tongatabu, appears not to be a real *Clusia*.

HAB. Ovolau, Feejee Islands; at the altitude of 1500 feet above the level of the sea.

"Tree 35 feet high," glabrous, with terete branches; the slender branchlets somewhat angled. Leaves opposite, approximate, short-petioled, oblong or oblong-lanceolate, acuminate at both ends, 2 to 2½ inches long, about two-thirds of an inch wide, coriaceous, both sides smooth and nearly similar in aspect, not shining, appearing *nearly veinless:* the base is acute and decurrent into the short petiole; the apex is conspicuously acuminate, but with a rounded point. The only *flowers* known are fertile, probably only *female* ones, from which the floral envelopes are deciduous: they are *axillary* and *solitary*, rarely in pairs, on *pedicels* of 3 lines in length, which are *bibracteolate* near the middle; the bractlets opposite and minute. The hypogynous torus appears to have borne very few sepals or other floral envelopes, and probably no stamens. Ovary ovoid, glabrous, fleshy, very obtuse, the apex covered with a very broad and depressed, disk-shaped, fleshy stigma, which is entire or nearly so; within it is two-celled, and with a single, oblong, amphitropous ovule in each cell; the micropyle apparently inferior. Fruit not seen, probably it is baccate.

Of the original species, *Discostigma caudatum*, as of ours, only the fertile flowers are known: these are said to be in small and lateral or axillary racemes. Even the floral envelopes of our plant are unknown; but there is hardly a doubt that it is a genuine species of *Discostigma*.

PLATE 16, *A*.—DISCOSTIGMA VITIENSE: fertile plant, with forming fruit. Fig. 1. Fertilized pistil, enlarged. 2. Vertical section of the same.

4. GARCINIA, *Linn.*

1. GARCINIA MANGOSTANA, *Linn.*

HAB. Mangsi Islands. (Foliage only collected.)

5. CALOPHYLLUM, *Linn.*

1. Calophyllum Inophyllum, *Linn.*

Hab. Society, Navigators', Friendly, Feejee, and Mangsi Islands: very common.

2. Calophyllum spectabile, *Willd.*

Hab. Navigators', Friendly, Feejee, and Mangsi Islands. (Foliage only, except the specimens from the Feejee Islands; these are in flower and fruit.)

There are also the following undeterminable *Guttiferæ* in the collection, namely: 1. A *Garcinia?* with male flower-buds only, from Muthuata Bay, Feejee Islands. 2. Possibly a second species of *Garcinia*, foliage only, from mountains near Baños, Luzon. 3. A third plant, foliage only, from the Samoan or Navigators' Islands, the genus of which cannot be guessed.

ORD. HYPERICACEÆ.

1. VISMIA, *Velloz.*

1. VISMIA HILARII, *Gardn. ined.*

Vismia Guianensis, St. Hil. Fl. Bras. Mer. 1, p. 327, non Chois, nec *Hypericum Guianense*, Aubl.

HAB. Brazil, near Rio Janeiro, and on the Organ Mountains.

2. HYPERICUM, *Linn.*

1. HYPERICUM GRANDIFOLIUM, *Choisy.*

Androsæmum Webbianum, Spach. Suit. Buff. 5, p. 418; Webb, Phytogr. Canar. 1, p. 50, t. 4, E.

HAB. Funchal and Curral, Madeira.

2. HYPERICUM FLORIBUNDUM, *Ait.*

Webbia floribunda, Spach. l. c.; Webb, Phytogr. Canar. 1, p. 46, t. 4, B.

HAB. On the coast, east of Funchal, Madeira.

3. HYPERICUM GLANDULOSUM, *Ait.*

Hypericum glandulosum, Ait. Hort. Kew.; Webb. Phytogr. Canar. 1, p. 44, t. 3.

Hab. On rocks, east of Funchal, Madeira; where it is abundant.

4. Hypericum perforatum, *Linn.*

Hab. Valley west of Curral and east of Funchal, Madeira. (Two forms of the species.)

5. Hypericum humifusum, *Linn.*

Hab. On rocks, east of Funchal, Madeira.

6. Hypericum Brasiliense, *Choisy.*

Hypericum Brasiliense, Choisy, in DC. Prodr. 1, p. 547; St. Hil. Fl. Bras. 1, p. 335.

Hab. Organ Mountains, Brazil.

7. Hypericum Japonicum, β. humifusum, *Hook. f.*

Hypericum Japonicum, Thunb. var. *β. humifusum*, Hook. f. Fl. N. Zeal. p. 37.
H. pusillum, Choisy, in DC. Prodr. 1, p. 549; A. Cunn. Prodr. Fl. N. Zeal.
Ascyrum humifusum, Labill. Fl. N. Holl. 2, p. 33, t. 175.

Hab. Waia-ruru Bay, and Bay of Islands, New Zealand.

8. Hypericum gramineum, *Forst.*

Hypericum gramineum, Forst. Prodr. p. 53; Labill. Sert. Austro-Cal. p. 53, t. 53; Hook. f. Fl. N. Zeal. p. 36.
H. involutum, Choisy, in DC. Prodr. 1, p. 549.
Ascyrum involutum, Labill. Fl. N. Holl. 2, p. 32, t. 174.

Hab. New South Wales, near Sydney, Hunter's River, &c.; both broad and narrow-leaved forms.

ORD. PITTOSPORACEÆ.

1. CITRIOBATUS, *A. Cunn.*

1. CITRIOBATUS MULTIFLORUS, *A. Cunn.*

Citriobatus multiflorus, A. Cunningham, ex Loud. Hort. Brit. Suppl.; Putterl. Syn. Pittosp. p. 4.

HAB. Puen Buen, New South Wales. (In fruit.)

2. BURSARIA, *Cav.*

1. BURSARIA SPINOSA, *Cav.*

Bursaria spinosa, Cav. Ic. 4, p. 30, t. 350; Sims, Bot. Mag. t. 1767; Putterl. Syn. Pittosp. p. 19.

HAB. Sydney, Puen Buen, &c., New South Wales.

2. BURSARIA DIOSMOIDES, *Putterl. l. c.*

HAB. Near Sydney, New South Wales.

3. BILLARDIERA, *Smith.*

1. BILLARDIERA SCANDENS, *Smith.*

Billardiera scandens, Smith, Specim. Bot. N. Holl. (Exot. Bot.) t. 1; Sims, Bot. Mag. t. 801.

HAB. Near Sydney, New South Wales; not uncommon.

2. BILLARDIERA MUTABILIS, *Salisb.*

Billardiera mutabilis, Salisb. Parad. Lond. 1, t. 48; Sims, Bot. Mag. t. 1313.

HAB. Puen Buen, &c., New South Wales.

4. PITTOSPORUM, *Soland.*

* *Australasica.*

1. PITTOSPORUM UNDULATUM, *Vent.*

Pittosporum undulatum, Vent. Hort. Cels. t. 76; Andr. Bot. Rep. t. 383; Ker. Bot. Reg. t. 16; Putterl. Syn. Pittosp. p. 6.

HAB. Sydney, New South Wales. (In fruit.)

2. PITTOSPORUM ACACIOIDES, *A. Cunn.*

Pittosporum acacioides, A. Cunn. Spec. Bot. N. Zeal. l. c. p. 109, adn.

HAB. Near Woolongong, New South Wales. (In fruit only.)

* * *Novo-Zelandica.*

3. PITTOSPORUM TENUIFOLIUM, *Banks & Soland.*

Pittosporum tenuifolium, Banks & Soland. in Gærtn. Fruct. 1, p. 86, t. 59; A. Cunn. Spec. Bot. N. Zeal. in Ann. Nat. Hist. 4, p. 107; Putterl. l. c. p. 13; Hook. f. Fl. N. Zeal. p. 21.
Trichilia monophylla, A. Rich. Fl. N. Zel. p. 360, t. 34.

HAB. Bay of Islands, New Zealand. (With mature fruit.)

4. PITTOSPORUM CORNIFOLIUM, *A. Cunn.*

Pittosporum cornifolium, A. Cunn. in Bot. Mag. t. 3161, & Spec. Bot. N. Zeal. l. c.; Putterl. Syn. Pittosp. p. 14; Hook. f. Fl. N. Zeal. p. 23.

HAB. Bay of Islands, New Zealand. (In fruit.)

5. PITTOSPORUM CRASSIFOLIUM, *Banks & Soland.*

Pittosporum crassifolium, Banks & Soland. ined.; A. Cunn. Spec. Bot. N. Zeal. l. c. 4, p. 106; Putterl. Syn. Pittosp. p. 12; Hook. f. Fl. N. Zeal. 1, p. 23.

HAB. Waia-ruru Bay, New Zealand. (In fruit.)

6. PITTOSPORUM UMBELLATUM, *Banks & Soland.*

Pittosporum umbellatum, Banks & Soland. in Gærtn. Fruct. 1, p. 286, t. 59; A. Cunn. l. c.; Putterl. l. c. (excl. syn. *P. eugenioides*); Hook. f. Fl. N. Zeal. p. 28.

HAB. Bay of Islands, Tippona, Waia-ruru Bay, New Zealand.

Putterlick's *P. microcarpum*, and not *P. umbellatum*, evidently is the *P. eugenioides* of A. Cunningham.

7. PITTOSPORUM PIMELIOIDES, *R. Cunn.*

Pittosporum pimelioides, R. Cunn. in. A. Cunn. Spec. Bot. N. Zeal. l. c.; Putterl. l. c.; Hook. f. l. c.

HAB. Bay of Islands, New Zealand. (In fruit.)

* * * *Polynesica.*

8. PITTOSPORUM ARBORESCENS, *Rich, in herb.*

P. glabrum; foliis chartaceis obovato-oblongis seu oblongis obtusis basi acutis longiuscule petiolatis margine subundulatis; pedunculis glomerato-multifloris; calyce 4–5-fido; petalis coalitis; capsula lævi sub-

globosa bacciformi bivalvi polysperma, valvis crassissimis dorso sulcatis; seminibus lenticularibus pallide purpureis.

HAB. Tongatabu. Also Feejee Islands.

"Tree 25 feet high," *glabrous* throughout, except a minute and deciduous pubescence on the inflorescence. *Leaves chartaceous* in texture, alternate, occasionally approximated as if in whorls, *obovate-oblong, oblong,* or sometimes narrowly elliptical-oblong, 3 or 4 inches in length, one or 2 inches in width, *obtuse* at the apex, *acute at the base,* tapering into a petiole of half an inch or more in length, smooth, scarcely shining above, paler and dull beneath, rather conspicuously feather-veined, the margin *minutely* undulate. Inflorescence terminal and in the upper axils. *Peduncles many-flowered,* short; the *flowers glomerate* in crowded cymules, small; the pedicels not more than a line and a half long, subtended by minute ovate-subulate bracts. *Calyx* 4–5-*cleft* to the middle, not longer than the pedicel, glabrous; the lobes ovate, obtuse. *Petals* 4 or 5, linear, more or less *coalescent* into a tube (especially about the middle), their obtuse apices imbricated in æstivation, 3 or 4 lines long. Stamens 4 or 5. Filaments subulate, short. Anthers introrse, linear-sagittate. Pistil glabrous: style short: stigma truncate, obsoletely two-lobed. Ovary sessile, imperfectly two-celled, many-ovuled. *Capsule fleshy or berry-like,* "orange-coloured," *smooth,* and glabrous (the surface minutely wrinkled in the dried state), *globular,* half an inch long, *two-valved, many-seeded:* the *valves very thick,* woody-coriaceous when dry, *grooved on the back* opposite the placenta. Seeds sessile and two-ranked on each valve, angled-*lenticular,* barely 2 lines in diameter; the smooth and *purplish* testa thin, not shining. Albumen and embryo as in the genus.

The materials consist of one poor specimen with flowers, chiefly unexpanded, and one with dehiscent fruit from Tongatabu; with a similar fruiting specimen from the Feejee Islands, the particular habitat not recorded. The inflorescence is like that of the following species.

9. PITTOSPORUM RICHII, Sp. Nov.

P. glabrum; foliis coriaceis lanceolato-oblongis utrinque acutis vel acutiusculis; pedunculis multifloris, floribus glomerato-cymosis; calyce *obtuse quinquefido; capsula subglobosa læviuscula bivalvi polysperma, valvis coriaceo-lignosis dorso convexis; seminibus ovalibus atris.*

HAB. Vanua-levu, one of the Feejee Islands.

Apparently a small tree, *glabrous* throughout, except the inflorescence which is minutely pubescent. *Leaves coriaceous*, but not very thick, alternate, crowded towards the end of the branches, of nearly the same green hue both sides, not shining, *lanceolate-oblong, acute at both ends*, or the apex sometimes obtuse, tapering into a petiole of half an inch or less in length, entire, inconspicuously feather-veined, 2½ to 3½ inches long, an inch to 1½ wide. *Peduncles many-flowered*, axillary and terminal, 6 to 12 lines long; the *flowers cymose-clustered*, small, on very short pedicels, subtended by minute bracts. *Calyx* nearly glabrous, scarcely a line in length, *obtusely five-cleft;* the lobes very short, roundish. Corolla in bud barely 1½ lines long; the petals oblong, imbricated, scarcely if at all coalescent. Stamens, pistil, &c., nearly as in the foregoing species. *Capsule globular*, apparently not baccate nor fleshy, *smoothish* (the surface minutely wrinkled), *two-valved, many-seeded;* the thick *valves rather woody* in texture, about 8 lines long and 10 lines wide, not grooved but *convex on the back. Seeds oval*, turgid, sessile, fully 2 lines long, with a rather fleshy, *black* and shining, smooth testa.

I have combined a fruiting specimen (from Vanua-levu) with two flowering specimens (the locality of which is not recorded), as in all probability belonging to the same species: and there is another imperfect specimen with young fruit, which is most probably to be referred here. The expanded flowers I have not seen. The species differs from the foregoing principally in the characters given in the specific phrase.

10. PITTOSPORUM BRACKENRIDGEI, Sp. Nov. (Tab. 17.)

P. glabrum; foliis coriaceis ovali-oblongis seu ellipticis obtusis basi acutis; pedunculis (fructiferis) binis ternisve terminalibus unifloris petiolum haud superantibus; capsula subglobosa læviuscula bivalvi polysperma, valvis coriaceo-lignosis dorso convexis; seminibus subglobosis atris.

HAB. Muthuata, one of the smaller Feejee Islands. (In fruit only.)

"A small tree, 15 to 20 feet high," *glabrous* throughout. *Leaves coriaceous* in texture, but not thick, alternate, much crowded at the summit of the branches, *oval-oblong* or *elliptical*, *obtuse*, or a few of them obtusely somewhat pointed, all *acute at the base*, smooth, scarcely shining above, dull, but little paler underneath, copiously feather-veined, entire, 3½ to 5 inches long, 1½ to 2 inches wide; the petioles from half to two-thirds of an inch in length. Flowers not seen: the specimens all with mature fruit. *Peduncles* (in fruit) 2 *or* 3 *together*, *terminal*, simple, apparently only *one-flowered*, 6 or 7 lines long, not exceeding the petiole. *Capsule globular*, apparently a little flattened parallel with the *two valves*, *smoothish*, but minutely tuberculate-wrinkled under a lens, apiculate with the short persistent style, very *many-seeded;* the *valves thick and rather woody*, 9 or 10 lines in length and breadth, *convex on the back*. *Seeds obovoid-globose*, in several series, with a smooth and *black* testa.

PLATE 17, *A*.—PITTOSPORUM BRACKENRIDGEI: branch in fruit. Fig. 1. Transverse section of a capsule. 2. A seed, enlarged.

11. PITTOSPORUM TOBIROIDES, Sp. Nov. (Tab. 17.)

P. glabrum; foliis coriaceis elliptico-obovatis obtusissimis subretusis basi acutis; pedunculis (fructiferis) terminalibus solitariis unifloris petiolum bis superantibus; capsula globoso-subtetragona lævi polysperma bivalvi, valvis crassissimis coriaceo-lignosis dorso convexis; seminibus subglobosis atris.

HAB. Somu-somu, Feejee Islands. (In fruit.)

Apparently a small tree, *glabrous*, except the peduncle, which is somewhat pubescent. *Leaves coriaceous*, somewhat shining above. scarcely paler underneath, *elliptical-obovate*, 2 or 3 inches long, 1¼ to nearly 2 inches wide, with a *very obtuse* and rounded or *slightly retuse* apex, *acute at the base*, but not so tapering as in *P. Tobira*, entire. copiously but not prominently feather-veined. Flowers not seen. Fructiferous *peduncle terminal*, and to all appearance *solitary* and only *one-flowered*, an inch long, *twice the length of the petioles. Capsule smooth* or nearly so, *globular*, but somewhat *quadrangular*, having rather acute angles at the dehiscent sutures, the placental sutures obtuse; the *valves thick and woody*, 9 lines in length and breadth, *many-seeded. Seeds globular*, a line and a half in diameter; the testa very smooth, *black* and shining.

This species bears more resemblance to the preceding than to any other; from which it is abundantly distinguished by its smaller and rounded leaves (that may be likened to those of *P. Tobira*, although larger and not so cuneate), and solitary, longer peduncles. It should be compared with *P. uniflorum* of Putterlick, which is briefly characterized from a cultivated specimen, of uncertain origin.

PLATE 17, *B.*—PITTOSPORUM TOBIROIDES: in fruit. Fig. 1. Transverse section of a capsule. 2. A seed, enlarged. 3. Vertical section of the same.

12. PITTOSPORUM PICKERINGII, Sp. Nov.

P. glabrum; foliis coriaceis oblongis vel oblongo-lanceolatis utrinque acuminatis margine undulatis; pedunculis terminalibus in umbellam digestis gracilibus apice umbellatim plurifloris; calyce abbreviato quinquefido; petalis discretis; ovario ovoideo quinqueloculari basi attenuato substipitato, loculis sexovulatis; stylo brevissimo.

HAB. Feejee Islands. (In flower only.)

Apparently a small tree, entirely *glabrous*, except the inflorescence, which is minutely pubescent. *Leaves coriaceous*, alternate, but mostly crowded as it were in whorls at intervals on the flowering branches, *oblong or oblong-lanceolate, acuminate at both ends*, from 4 to 6 inches in length, and 1¼ to 2 inches in width, on petioles of about an inch in length, smooth and of the same hue both sides, rather conspicuously feather-veined, the *margins undulate*, often as if repand-crenulate. *Inflorescence terminal: peduncles* 6 or 7 in number, *umbellate*, subtended by as many leaves of the ultimate false whorl, *slender*, unequal, from one to 2 inches in length, naked, *umbellately 3–7-flowered* *at the apex:* pedicels 4 or 5 lines long, subtended by small subulate bracts. *Calyx short,* barely a line in length, *five-cleft* scarcely to the middle; the lobes obtuse. Corolla 3 or 4 lines long; the *petals distinct,* oblong-linear. Filaments linear-subulate, thrice the length of the sagittate and mucronulate anthers. *Ovary ovoid* or fusiform, pubescent (the pubescence apparently deciduous), *five-celled, narrowed at the base,* so as to be *slightly stipitate,* tapering at the apex into a *very short style* (of not more than half a line in length): stigma obscurely five-lobed. *Ovules* 6 *in each cell,* crowded in a single series at the middle portion of the axis, on short but distinct funiculi. Fruit not seen.

This would belong to the section *Senacia* of Blume (Mus. Bot. Lugd.-Bat. 1, p. 159); but it is manifestly different from any described species.

13. PITTOSPORUM RHYTIDOCARPUM, Sp. Nov. (Tab. 18.)

P. glabrum; foliis coriaceis oblanceolatis seu obovato-oblongis breviter acuminatis basi attenuatis; floribus in umbellulas sessiles terminales congestis; calyce abbreviato quinquesepalo; petalis coalitis; ovario tomentuloso haud stipitato; stylo longiusculo; capsula oblonga lignosa crassissima tuberato-rugosissima bivalvi polysperma; seminibus compressis.

HAB. Ovolau, Muthuata, and north coast of Viti-levu, Feejee Islands.

Three or four forms, or varieties, occur in the collection, most of them in fruit, probably all of them referable to one species, which is remarkable for its warty-tuberculate capsule. It is "a shrub, or small tree, from 6 to 20 feet high," *glabrous,* except the inflorescence, which is pubescent. *Leaves coriaceous,* green, and of nearly the same hue both sides, *oblanceolate,* varying to obovate-lanceolate and *obovate-oblong,* acute or *acuminate* with a short point, usually *tapering* from the middle *to a slender base,* decurrent into the petiole (which is an inch or 1½ inches long), feather-veined, with entire or slightly undulate margins, from 4 to 7 inches in length, and 1½ to 2 inches in width: they are either scattered or falsely whorled, as is common in the genus. *Flowers terminal*, or in the axils of the whorled leaves which terminate the flowering branches, in one or more *small and sessile umbels* or fascicles, which are shorter than the petioles. Pedicels 2 or 3 lines long, with subulate bracts at their base. *Calyx* of five ovate or oblong *distinct sepals*, a line and a half long. Corolla half an inch long; the *petals coalescent* above the middle, forming a tube, their free and obtuse summits spreading. Filaments subulate, more than twice the length of the sagittate mucronulate anthers. *Ovary not stipitate*, nor contracted at the base, linear-oblong, *minutely tomentose*, pointed with the *rather slender style* (1½ lines long): stigma two-lobed. Ovules very numerous on the two placentæ, sessile. *Capsule oblong*, 1¼ inches in length, *very thick and woody*, minutely tomentose when young, and then more or less two-edged or crested, the surface excessively *tuberculate-rugose or warty*, *two-valved*, *many-seeded*. *Seeds compressed* vertically, 2½ to 3 lines in diameter, with a pale and nearly smooth testa, not shining, almost destitute of funiculi.

PLATE 18.—PITTOSPORUM RHYTIDOCARPUM. Fig. 1. Branch, with flowers and young fruit. 2. Another form, with young fruit. 3. A large-leaved form, with dehiscent capsules. 4. A flower, enlarged. 5. The connected petals displayed. 6. A stamen, seen from the outside. 7. The same, seen from within. 8. Pistil, with a stamen and the receptacle. 9. Transverse section of the ovary. 10. Pistil, with the ovary longitudinally divided. 11. Transverse section of a capsule. 12. A seed. 13. The same, divided, to show the embryo, &c. —All the analyses enlarged, except Fig. 11.

* * * * *Sandwicensia.*

14. PITTOSPORUM GLABRUM, *Hook. & Arn.*

P. undique glabrum; foliis tenuiter coriaceis lævibus obovato-oblongis oblanceolatisve basi attenuatis apice obtusis vel subacuminatis; pedunculis terminalibus nunc lateralibus subracemoso-paucifloris; calyce quinquepartito ovario pedicellisque glaberrimis; capsula lævi subglobosa compressiuscula bivalvi polysperma, valvis coriaceis; seminibus atropurpureis lævibus.

Pittosporum glabrum, Hook. & Arn. Bot. Beech. Voy. p. 110, vix Putterl. Pittosp.

HAB. On the Kaala Mountains, and behind Honolulu, Oahu, Sandwich Islands.

A tall shrub, or small tree, *glabrous* throughout, even the inflorescence. *Leaves coriaceous*, but mostly rather thin, scattered or approximate in false whorls, from 2 to 5 inches long, the widest part an inch to an inch and a half in breadth, *obovate-oblong*, or *oblanceolate*, with a *tapering base*, the apex either *obtuse*, rounded, or *more* or *less acuminate*, very smooth even when young, of nearly the same hue both sides, entire, inconspicuously veined: petioles from 6 to 12 lines long. *Peduncles terminal, or lateral* (by the yearly growth of the branch), and below the leaves, spreading or pendulous, glabrous, half an inch or more in length, *racemosely* or corymbosely *few-*(5–6)*-flowered* at the apex. Pedicels, 3 lines long. *Calyx five-parted*, very short, 1½ lines in diameter, wholly glabrous; the segments broadly ovate, acute. Corolla 6 lines long, apparently white: the petals linear-spatulate, connivent, and at their upper part coalescent into a tube; the dilated and spreading tips about 2 lines in length. Filaments filiform, 3 or 4 lines long: anthers linear-sagittate, mucronate. *Ovary entirely glabrous*, sessile, somewhat quadrangular, terminated by a columnar style as long as itself; the stigma truncate. *Capsule subglobose*, but *somewhat compressed* parallel with the *two valves*, glabrous, *smooth*, or the surface minutely roughish, two-celled, *many-seeded;* the *valves coriaceous*, not very thick, about an inch in length and 9 lines broad. *Seeds dark purple*, closely packed in two rows in each cell, vertically compressed, 2 or 3 lines in diameter; the *testa smooth* (Plate 19, Fig. 12), scarcely if at all shining.

There are specimens in the collection, from the mountains behind Honolulu (in fruit only) which, with the foliage and the smooth seeds of *P. glabrum*, have thicker-walled and minutely tomentose pods, the surface of which is more or less tubercular-roughened. These, with some other specimens, seem to be intermediate between *P. glabrum* and the following species, although the ordinary states of the two would appear to be abundantly different. It remains to be seen, however, whether the character taken from the seeds will prove constant.

15. PITTOSPORUM TERMINALIOIDES, *Planchon, in Herb. Hook.*

P. foliis coriaceis oblongo-obovatis obtusis basi attenuatis subtus (præsertim junioribus) cum inflorescentia brevissima pauciflora calyce quinquesepalo et ovario tomentoso pubescentibus, pube sæpius ferruginea; seminibus scabro-rugosis:—cæt. fere præcedentis.

Pittosporum glabrum, Putterl. Synops. Pittosp. p. 11, pro parte, non Hook. & Arn.

Var. *β. foliis magnis etiam adultis subtus bracteisque aurato-tomentosis sæpius oblongo-oblanceolatis et breviter acuminatis.*

Var.? *γ. foliis parvulis confertis etiam junioribus glabris.*

HAB. Hawaii, Sandwich Islands; on the coast southeast of the crater of Lua Pele and Puna. On Mouna Loa at an elevation of 7,000 feet. *β.* Kaala Mountains, Oahu; also on mountains of Kauai. *γ.*? District of Waimea, Hawaii; and Kaala Mountains, Oahu. (Also collected by Douglas.)

Apparently a large shrub, with stout branches; the branchlets often pubescent. *Leaves coriaceous*, usually thick and firm, crowded at the end of the branches, *oblong-obovate*, or somewhat cuneiform, with the apex mostly rounded, *obtuse* or even retuse, always *tapering at the base*, conspicuously feather-veined and reticulated, glabrous and shining above, *clothed underneath, at least when young, with a tomentose pubescence*, which is usually rusty or *ferrugineous*, from 3 to 5 or even 8 inches long, by one to 2, or even 3 in width, on petioles of 6 to 12 lines in length; its margins entire and revolute. *Inflorescence very short*, usually lateral and below the leaves of the season, *few-flowered, tomentose or pubescent;* the peduncles only 2 or 3 lines long; the pedicels very short, sometimes solitary in the axils of the leaves. *Calyx pubescent*, of 5 wholly *distinct sepals*. Corolla, stamens, &c., nearly as in the foregoing species, but the *ovary* is *densely tomentose or pubescent*. Capsule tomentulose or glabrate, two-valved, considerably compressed parallel to the valves, many-seeded; the valves coriaceous, pretty thick, at length flat after dehiscence, and then almost orbicular in outline, 9 or 10 lines in diameter, slightly grooved on the back, especially next the base, where they are sometimes a little emarginate, the surface even or slightly roughened. Seeds very numerous, closely packed in two rows in each cell, vertically more or less compressed, 2 to 2½ lines in diameter; the purple or brownish testa *rugose-roughened* (Plate 19, Fig. 13), usually dull.—Of the various forms of this species which occur in the collection, one, the var. β., has the *leaves mostly acuminate*, 5 or 6 inches in length and proportionally narrow (*oblong-lanceolate*), the lower surface, as well as the branchlets, bracts, &c., clothed, even at maturity, with a dense *brownish-yellow tomentum*. In the typical forms the down is seldom so yellow or so persistent. The specimens from Mouna Loa and from the district of Puna have smaller leaves, of very thick texture, and their young capsules are densely tomentose. Another variety, if such it be, the var. γ., has usually smaller leaves, only 1½ to 3 inches in length, *much crowded* at the summit of the branches, and *entirely glabrous*, even when young; but the inflorescence and calyx are more or less tomentose-pubescent. It must be left for a more complete suite of specimens, in fruit as well as in flower, to determine the true limits of this apparently polymorphous species.

16. PITTOSPORUM CONFERTIFLORUM, Sp. Nov. (Tab. 19.)

P. foliis crasse coriaceis obovatis supra glabris subtus ramisque novellis lanato-tomentosis; umbella terminali subsessili confertiflora; calyce quinquesepalo majusculo pedicellisque tomentosissimis; petalis in tubum calyce vix duplo longiorem subcoalitis; capsula ovoideo-globosa subcompressa tomentosa tuberato-rugosa bivalvi polysperma, valvis crassis lignosis; seminibus atropurpureis rugulosis.

HAB. At the base of the crater of Haleakala, east division of Maui, Sandwich Islands.

"Tree 20 feet high, with odoriferous flowers." Branches very stout, leafy, *woolly when young*. *Leaves very thick and coriaceous*, alternate, but crowded on the branches, sometimes imperfectly whorled, *obovate*, or obovate-oblong, obtuse, or often with a short acumination, tapering at the base into a short petiole, the nascent ones woolly both sides, when full-grown very *glabrous above* and somewhat shining, densely *tomentose underneath* with fulvous wool, which is more or less deciduous with age, 3 or 4 inches in length, 1½ to 2 inches wide towards the apex, strongly and copiously feather-veined, the upper surface finely bullate-reticulated; the margins entire and revolute. Flowers very numerous and *crowded in a dense, terminal and nearly sessile umbel*, large for the genus. *Pedicels* half an inch long, thick, very woolly, as are the bracts, &c. *Calyx very woolly* externally; the *sepals* 5, *distinct*, orbicular-ovate, obtuse, imbricated, 3 lines long. Corolla glabrous, probably white (but the colour not recorded); the *petals* of a thickish texture, connivent, and above somewhat *cohering, into a tube* of 5 or 6 lines in length, their broadly ovate summits 3 or 4 lines long, forming a spreading limb, imbricated or sometimes convolute in æstivation. Stamens nearly as long as tube of the corolla: filaments filiform-subulate: anthers linear-sagittate, apiculate. Pistil 6 lines long. *Ovary sessile*, oblong, tomentose, incompletely two-celled; the cells many-ovuled. Style thick, glabrous, about as long as the ovary, terminated by a truncate undivided stigma. *Capsule globular-ovoid, somewhat flattened* parallel with the valves, *tomentose*, becoming glabrate with age, two-celled, *two-valved, many-seeded;* the *valves thick and woody, tubercular-wrinkled* and rough externally, nearly an inch in length and breadth. *Seeds dark purple*, compressed and angled, closely packed in two rows in each cell; the testa dull, minutely tuberculate-*rugose:* funiculi scarcely any.

The flowers of this remarkable species are among the largest of the genus: they are said to be odorous. If of a good colour, the species would be a very desirable one in cultivation.

PLATE 19.—PITTOSPORUM CONFERTIFLORUM: in flower and in fruit, of the natural size. Fig. 1. A flower, with its pedicel and bract, of the natural size. 2. Diagram of a flower. 3. Corolla, detached and laid open, enlarged. 4. Stamens and pistil, equally enlarged. 5. Pistil, transversely divided, more enlarged. 6. Longitudinal section of the same. 7. An ovule, more magnified. 8. A valve of the capsule, of the natural size; inside view, showing the seeds, &c. 9. Transverse section of a dehiscent capsule. 10. A seed, enlarged. 11. Vertical section of the same, showing the minute embryo in the base of the albumen. 12. Seed of PITTOSPORUM GLABRUM, enlarged. 13. Seed of PITTOSPORUM TERMINALIOIDES, equally enlarged.

ORD. AURANTIACEÆ.

1. ATALANTIA, *Correa.*

1. ATALANTIA MONOPHYLLA, *DC.*

HAB. On a small island in the Sooloo Sea. (Flowers occasionally trimerous.)

2. TRIPHASIA, *Lour.*

1. TRIPHASIA MONOPHYLLA, *DC.*

HAB. On mountains, in the neighbourhood of Baños, Luzon. (Without flowers or fruit.)

2. TRIPHASIA TRIFOLIATA, *DC.*

HAB. In the vicinity of Manilla, Luzon.

3. SCLEROSTYLIS, *Blume.*

1. SCLEROSTYLIS ATALANTIOIDES, *Wight & Arn.?*

HAB. Mangsi Islands, in the Sooloo Sea.

This is the same as No. 991 of Cuming's Philippine Collection. I am unable satisfactorily to determine it.

4. MURRAYA, *Kœnig.*

1. Murraya exotica, *Linn.*

Hab. Philippine Islands, near Manilla, Luzon.

5. MICROMELUM, *Blume.*

1. Micromelum pubescens, *Blume.*

Micromelum pubescens, Blume, Bijdr. p. 138.

Hab. Mangsi Islands, in the Sooloo Sea. (In fruit only.)

The leaflets in this, as in Javan specimens, are often acutely acuminate, and from 9 to 13 in number. They are glabrate, or perfectly glabrous, except when young. The fruit is *oval* and about 4 lines long.

2. Micromelum glabrescens, *Benth.*

Micromelum glabrescens, Benth. in Hook. Lond. Jour. Bot. 2, p. 213.
Limonia minuta, Forst. Prodr. Fl. Ins. Austr. p. 33; DC. Prodr. 1, p. 536.

Hab. Friendly, Samoan or Navigators', and Feejee Islands: common.

"A shrub 4 to 10 feet high."—This is very closely related to Blume's *M. pubescens;* from which it is to be distinguished mainly by its smaller flowers (only a line and a half in length), and its *oblong fruit*, which when full grown is half an inch in length. Mr. Bentham seems not to have been aware that it is the *Limonia minuta* of Forster, who found it at the Friendly Islands.

6. CITRUS, *Linn.*

1. Citrus Decumana, *Linn.*

Hab. Tongatabu, and Feejee Islands. Introduced and cultivated. (The *Shaddock*.)

Another species, mentioned by Dr. Pickering under the name of *Citrus torosa* (a name which I do not find anywhere published), is said to be introduced into the Samoan, Tonga, and Feejee Islands. There are no specimens in the collection.

Ord. MELIACEÆ.

1. AGLAIA, *Lour.*

1. Aglaia odorata, *Lour.*

Aglaia odorata, Lour. Fl. Cochinch. 1, p. 216; DC. Prodr. 1, p. 537; Hook. & Arn. Bot. Beech. Voy. p. 174, t. 24.

Hab. Singapore. (In flower only, with the ovary sterile.)

2. Aglaia Samoensis, Sp. Nov.

A. foliolis 5–11 *oblongo-lanceolatis acuminatis basi rotundatis vel acutiusculis subtus ramulisque minutissime ferrugineo-lepidotis glabratis; paniculis compositis; fructu immaturo biloculari.*

Hab. Tutuila, one of the Samoan or Navigators' Islands.

Shrub or tree with the *branchlets, &c., rusty with a fine reddish scurf,* becoming smooth with age. Leaves pinnate, 6 to 15 inches long, including the petiole, alternate, occasionally almost opposite. *Leaflets* 5 *to* 11, *oblong-lanceolate,* from 3 to 5 inches in length, *acuminate,* either obtuse, *rounded, or acutish at the base,* petiolulate, somewhat repand, rather membranaceous in texture, *glabrate* or, at least when young, *rusty underneath with a minute ferruginous scurf. Panicles compound,* ample, axillary, very many-flowered, clothed with a reddish scurf, as is the calyx also. Flower-buds less than a line in diameter, globose. Petals orbicular-obovate, concave or connivent, of a thickish texture, imbricated in æstivation, much longer than the rusty-pubescent calyx. Stamineal tube obovoid-turbinate, with scarcely any contracted base, the border obscurely five-toothed, with 5 sessile, nearly included anthers alternate with the teeth. Ovary two-celled? apparently sterile in the flowers examined. Immature fruit obovoid, half an inch in length, two-celled; only one cell containing a seed in the single fruit contained in the collection. The immature seed oblong, apparently destitute of arillus, but with a fleshy integument.

3. AGLAIA (MILNEA) EDULIS.

Milnea edulis, Roxb. Fl. Ind. 1, p. 637, & ed. Wall. 2, p. 430.

HAB. Samoan and Feejee Islands. (In flower only.)

Probably the "complete, fleshy arillus, covering the seed" in *Milnea* is only a fleshy integument of the seed; which would abolish the only character left to distinguish *Milnea* from *Aglaia.* The petals in the present species are imbricated (not convolute) in æstivation.

4. AGLAIA? BASIPHYLLA, Sp. Nov.

A. ramulis junioribus petiolis costisque subtus pube rufa furfuraceo-hirsutis; foliolis 5–7 elongato-oblongis membranaceis petiolulatis, infimis minoribus sæpissime imæ basi petioli adproximatis; floribus axillaribus glomeratis subsessilibus.

HAB. Ovolau, Feejee Islands.

The specimens of this tree or shrub, having young fruit only, are not in a state for determination. I can only conjecture that the plant may be an *Aglaia*. The branchlets, petioles, and the midrib of the leaflets underneath, at least when young, are thickly clothed, not only with the *scurf* which is common in the genus, but with a stellate *hirsute pubescence, of a rusty-red colour.* The *leaflets*, 5 *to* 7 in number, are *elongated-oblong, membranaceous,* glabrous, mostly obtuse at both ends, rather long-petiolulate, the larger, especially the superior ones, from 3 to 5 inches in length; *the lowest pair usually closely approximate to the base of the petiole,* so as to appear like a pair of leafy stipules; they are smaller and shorter than the others, an inch or two in length, often subcordate at the base. A short spur in the axils bears apparently a small number of *flowers, in a nearly sessile cluster.* The young fruits are cylindraceous or club-shaped, 5 lines long, ferruginous-tomentose, incompletely two-celled, the base surrounded by the five-toothed, ferruginous-hirsute, persistent calyx.

Two other plants, apparently congeners of the last, occur in the collection from the Feejee Islands, in a state too imperfect for identification or description; the specimens having only one or two half grown (one-celled, or at first two-celled) fruits. They do not accord with the brief characters of any of Blume's species of *Aglaia*.

2. HARTIGHSEA, *A. Juss.*, ex parte.

1. HARTIGHSEA SPECTABILIS, *A. Juss.*

Hartighsea spectabilis, A. Juss. Meliac. (in Mem. Mus. Par. 9,) p. 76 & 111; Hook. Ic. Pl. t. 615, 616; Hook. f. Fl. N. Zeal. p. 39.
Trichilia spectabilis, Forst. Prodr. p. 33; A. Rich. Fl. N. Zel. p. 306.

HAB. Bay of Islands, New Zealand. (With young flower-buds only.)

Dr. Hooker has overlooked Mr. Bennet's remark (in Pl. Jav. Rar. p. 170), that this is not a true species of *Hartighsea*, but differs from the typical species "in the entire want of cohesion between the petals and the stamineal tube, and consequently of the petals *inter se* (notwithstanding the description given by Forster), and in several other characters of minor importance." He has moreover conformed the generic character to the exception; the phrase "*petala basi cum tubo stamineo obscure coalita*," being inapplicable to the typical *H. Fraseriana*, in which the cohesion extends to the middle of the stamineal tube, according to the figure in M. de Jussieu's Memoir.* I have not seen that species, nor does its fruit appear to be known; but except in its shorter tubular disk, it seems to differ in no essential particular from the older genus *Didymochiton*, to which I should confidently refer *H. Forsteri*, Juss., along with a species in the present collection. If this view were adopted, the name of *Hartighsea* might be retained for *H. spectabilis* and *H. Billardieri*.

3. DIDYMOCHITON, *Blume.*

DIDYMOCHITON (v. Didymocheton), Blume, Bijdr. p. 177; Juss. Meliac. l. c. p. 78, t. 16, f. 14.
HARTIGHSEÆ, Spec. Juss. Meliac. p. 76.

1. DIDYMOCHITON RICHII, Sp. Nov. (Tab. 20.)

D. glabratum, foliolis 5–8-jugis oblongis seu lanceolato-oblongis subacuminatis basi rotundato-inæquilateris; paniculis compositis thyrsoideis racemifloris; floribus sæpius tetrameris; columna staminea et disco glabro tubulari minutissime crenulatis; ovario tri–quadriloculari, loculis uniovulatis.

HAB. Feejee Islands: Vanua-levu, at Sandalwood Bay; Somusomu; Nukulau.

A tree of considerable size, the younger parts softly canescently puberulent, soon *glabrate*. Petioles a foot or more in length, velvety-puberulent or glabrate, sometimes sparingly pubescent along the upper side. *Leaflets* 5 *to* 8 *pairs*, sometimes with and sometimes without a terminal leaflet, *oblong*, or *oblong-lanceolate*, 3 or 4 inches in length, or the lowermost 1¼ to 2 inches in length, and from an inch to 1½ inches in breadth, *slightly acuminate*, entire or slightly repand, *unequal at the base*, the upper side rounded, the lower oblique, often subcordate; the midrib above and the partial petiole (3 or 4 lines long) tomentulose; the surface glabrous, except usually a bearded pubescence in the axils of the primary veins underneath. *Panicles compound*, axillary, many-flowered, *thyrsoid*, the *flowers racemose* on its spreading branches, most frequently *tetramerous*. Pedicels extremely short. Calyx half a line long, tomentulose, cupulate, 4–5-toothed. Corolla "white," 3 lines long; the petals spatulate-linear, slightly pubescent externally, coherent with the stamineal tube to the middle, valvate in æstivation. *Stamineal tube* nearly as long as the corolla, cylindrical, a little hairy outside, its orifice *minutely multicrenulate*, not setigerous. Anthers 8 in the tetramerous, 10 in the pentamerous flowers, sessile within the orifice of the tube, oblong-linear, muticous. *Hypogynous disk tubular*, between lageniform and urceolate, *glabrous*, sheathing the ovary and the base of the style, its orifice minutely 8–10-crenulate. *Ovary* ovoid, very villous, 3–4-*celled:* style filiform, hairy below, as long as the stamineal tube; the stigma dilated and disk-shaped. *Ovules solitary* in each cell, amphitropous-ascending; the micropyle superior. Immature fruit ovoid, 3–4-celled, probably baccate, 3–4-seeded, or by abortion 1–2-seeded.

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* The genus was not named after G. L. Hartig, who was, moreover, a German, not a "French" author; but in honour of a Dutch navigator, whose name, though not given by Jussieu, must have been *Hartighs* or *Hartighse*.

From the character given by Jussieu, and the detailed description reproduced by him from Forster's manuscript, I should have taken this plant for the *Trichilia alliacea* of Forster, the *Hartighsea Forsteri*, A. Juss.; were it not that the "*interior nectary*" (the tubular disk) in that plant, is said by Forster to be *villous*, and the *exterior*, or stamineal tube, according to Jussieu, has its crenatures *setigerous*. At least Forster's plant (which came from an island in nearly the same longitude, only three degrees farther south) must be a close congener of ours, which appears to me to belong to Blume's genus *Didymochiton*, notwithstanding the gamophyllous calyx, the rather shorter tube of the disk, and the solitary ovules.

PLATE 20.—DIDYMOCHITON RICHII: flowering branch, of the natural size. Fig. 1. A flower. 2. Flower, with the calyx removed and

corolla, the adnate stamineal column and the tubular disk laid open. 3. An anther, seen from within. 4. The same, seen from without. 5. Vertical section of an unexpanded flower. 6. Transverse section of the ovary.—All these details variously magnified. 7. Portion of inflorescence with unripe fruits, of the natural size. 8. Vertical, and 9, transverse section of an unripe fruit.

2. DIDYMOCHITON GAUDICHAUDIANUM, *A. Juss., l. c.?*

HAB. Mangsi Islands, in the Sooloo Sea. (Without flowers or ripe fruit.)

4. DYSOXYLON, *Blume.*

1. DYSOXYLON? SAMOENSE, Sp. Nov.

D. foliolis 6–9-jugis cum vel absque impari oppositis oblongis acuminatis basi obtusis vel rotundatis; paniculis multifloris; fructibus immaturis obovatis.

HAB. Manua and Tutuila, Samoan or Navigators' Islands.

This brief character is taken from two specimens, one with flower-buds and developing leaves; the other with full-grown, ample leaves, and immature fruit. It is not absolutely certain, therefore, that the two belong to the same species. From these unsatisfactory materials, I can only conjecture that the plant belongs to Blume's genus *Dysoxylon.* It cannot be a *Hartighsea* nor a *Didymochiton*, however those genera be limited; for the petals are decidedly *imbricated* in æstivation, as well as free from the stamineal tube.—The size of the tree is not recorded, nor is the wood said to have any odour. The branches and leaves are glabrous, except a minute and cinereous pubescence when very young, which is more or less persistent on the petioles and the inflorescence. Petiole with the rhachis one or two feet long. *Leaflets 6 to 9 pairs, sometimes with a much smaller terminal* one, oftener abruptly pinnate: they are *opposite, oblong, acuminate,* from 5 to 7 inches long when full grown, membranaceous, glabrous, mostly *rounded* and slightly oblique *at the base*, on partial petioles of 2 or 3 lines in length; or the terminal one when present with a stalk an inch long. *Panicles many-flowered*, axillary, much shorter than the leaves, compressed. Flower-buds crowded on the extremity of the stout branchlets of the panicle, on very short pedicels. Calyx silky-puberulent, 2 lines in diameter, of a thick and firm texture, four-cleft; the lobes orbiculate, imbricated. The unexpanded corolla scarcely exceeding the calyx; the petals orbicular or broadly ovate, silky-pubescent outside, imbricated in æstivation, free from and longer than the glabrous, cup-shaped or urceolate, eight-toothed stamineal tube, which bears 8 sessile and nearly included anthers, alternate with its lobes. Hypogynous disk annular or cup-shaped, not so high as the four-celled ovary. Style short: stigma peltate and disk-shaped. Ovules in pairs in each cell. *Immature fruit obovate*, nearly an inch long, 3–4-celled, of a rather soft texture, it is uncertain whether baccate or capsular.

5. MOSCHOXYLUM, *A. Juss.*

1. Moschoxylum Richardianum, *A. Juss.*

Moschoxylum Richardianum, A. Juss. Meliac. p. 86; Walp. Repert. 1, p. 433.
Trichilia Richardiana, A. Juss, in St. Hil. Fl. Bras. Mer. 2, p. 78.

Hab. Brazil, near Rio Janeiro.

2. Moschoxylum elegans, *A. Juss.*

Moschoxylum elegans, A. Juss. Meliac. l. c. p. 87, t. 19, f. 19.
Trichilia elegans, A. Juss, in St. Hil. Fl. Bras. Mer. 2, p. 79, t. 98.

Hab. Brazil; with the preceding species: both apparently not uncommon.

6. GUAREA, *Linn.*

1. Guarea purgans, *A. Juss.*

Guarea purgans, A. Juss. Meliac. l. c. & in St. Hil. Fl. Bras. Mer. 2, p. 83.

Hab. Brazil, near Rio Janeiro.

2. Guarea tuberculata, *A. Juss.*

Guarea tuberculata, A. Juss. Meliac. l. c. & in St. Hil. Fl. Bras. Mer. 2, p. 83, t. 100.

Hab. Brazil: with the preceding species.

7. XYLOCARPUS, *A. Juss.*

1. Xylocarpus Granatum, *Kœnig.*

Xylocarpus Granatum, Kœnig; Roxb. Fl. Ind. 2, p. 240; A. Juss. Meliac. p. 92, t. 20, f. 22.
Carapa Moluccensis, Lam. Dict. 1, p. 621; DC. Prodr. 1, p. 626.

Hab. Feejee, Tonga, and Samoan or Navigators' Islands: on the coast.

2. Xylocarpus obovatus, *A. Juss. l. c.?*

Carapa obovata, Blume, Bijdr. p. 179?

Hab. Feejee Islands: in fruit only. Possibly only a variety of the preceding species.

Imperfect fruiting specimens of an apparently Meliaceous tree likewise occur in the collection, which I cannot determine. The tree is said to occur in cultivated ground only, planted by the natives, at Tongatabu, Savai, one of the Navigators' Islands, and Tahiti. It is mentioned by Dr. Pickering as the *Mallea Rothii*, A. Juss. (which I observe A. Richard enumerates as collected by Lesson at Tongatabu): but it cannot be that plant, nor of the same genus.

⁂ MELIACEIS AFFINE.

8. VAVÆA, *Benth.*

Calyx 4–7-*fidus, persistens; lobis triangulari-ovatis æstivatione leviter imbricatis. Petala lobis calycis numero æqualia, hypogyna, ligulato-oblonga, utrinque sericeo-puberula, æstivatione leviter imbricata, decidua. Stamina* 12–20, *inæquilonga: filamenta basi glabra in tubum disco hypogyno cupuliformi carnoso adnatum monadelpha, superne intus hirsutissima: antheræ introrsæ, biloculares, loculis longitudinaliter dehiscentibus. Ovarium intra discum sessile,* 3–4-*loculare, in stylum columnarem extensum: stigma crassum, peltatum, obscure* 3–4-*radiatum. Ovula in loculis gemina, angulo centrali affixa, collateralia, adscendens, subamphitropa, micropyle supera. Bacca globosa, abortu* 1–4-*sperma.—Arbuscula glabella; foliis simplicibus obovato-oblongis alternis obsoletissime punctatis; pedunculis ex axillis superioribus multifloris; floribus cymosis.*

VAVÆA, Benth. in Hook. Lond. Jour. Bot. 2, p. 212.

1. VAVÆA AMICORUM, *Benth. l. c.* (Tab. 16.)

HAB. Muthuata and Vanua-levu, Feejee Islands. Also, Tongatabu, Friendly Islands. (Vavao, Friendly Islands, Mr. Barclay.)

Apparently a small tree (the size not recorded), glabrous or *glabrate*, except the nascent parts (which are silky-pubescent) and the flowers. The bark is said to be bitter, like that of *Canella*. *Leaves alternate*, crowded towards the end of the branches, *simple*, entire, *obovate-oblong*, obtuse, or retuse, or sometimes obscurely acuminate, occasionally cuneate-obovate, always acute at the base, tapering into a petiole of an inch or less in length, chartaceous in texture, pinnately veined with 6 or 7 pairs of rather prominent primary veins, connected by minute, reticulated veinlets, *obscurely and minutely punctate* with pellucid dots: they are from 3 to 6 inches long and 1½ to 3 inches wide. Stipules apparently none; what were taken for linear-lanceolate and villous deciduous stipules being apparently nascent leaves or perulæ. *Peduncles* solitary *in the axils of the upper leaves*, shorter than they, naked below, *many-flowered* at the summit; the *flowers* in a compound *cyme;* its branches puberulent, with ovate-subulate bracts and bractlets. *Calyx* 4–7-*cleft* below the middle, free, puberulent, *persistent; the lobes triangular-ovate, lightly imbricated in æstivation. Petals as many as the lobes of the calyx* and alternate with them, *hypogynous, ligulate-oblong*, of a thickish texture, clothed with a fine and close *silky pubescence on both sides, lightly imbricated in æstivation*, recurved-spreading from an erect base in anthesis, twice or thrice the length of the calyx, 2 or 3 lines long, *deciduous*. *Stamens* 12 *to* 20, or perhaps 21, usually 12 in tetramerous flowers, and about 15 in pentamerous flowers, therefore normally thrice the number of the petals, more or less *unequal* in length, *hypogynous*, free from the petals, shorter and less deciduous than they: *filaments* flat, linear, *glabrous towards the base*, where they are *monadelphous, and also coherent with the* whole exterior face of an annular, *cup-shaped, and fleshy, hypogynous disk*, above distinct, but closely approximate in a single series, *very hirsute towards the summit;* the long and dense beard mostly borne on the inner face: *anthers* oval, emarginate at both ends, *two-celled*, fixed by the sinus at their base to the narrowed apex of the filament, introrse; the cells opening longitudinally for their whole length. Disk surrounding the ovary and equalling it in length, rather thin, minutely pubescent inside. *Ovary* 3–4-*celled*, free, ovoid, densely hirsute-pubescent, closely sessile within the disk; the cells small in proportion to the thick and fleshy parietes. *Style columnar*, rather thick, as long as the stamens, pubescent below: *stigma peltate* or disk-shaped, *thick*, undivided, the summit *obscurely* 3–4-*radiate*. *Ovules* 2 *in each cell*, attached to the inner angle near the base, *ascending, collateral, between orthotropous and amphitropous, the micropyle superior*. The ripe fruit is unknown: the young state, however, manifestly indicates it as a fleshy or pulpy, *spherical berry*, of small size, stipate by the persistent calyx, with small cells, some, or perhaps all but one, of which (and a single seed?) may be suppressed in ripening.

The ripe fruit and seeds are still wanting to the full illustration of this remarkable plant. Until the latter are known, the affinity of the genus cannot be positively made out. Mr. Bentham thought it allied to *Leionanthes* of Jack, itself a genus of very obscure affinities; but, having subsequently examined specimens of the latter, he no longer recognises the relationship. Mr. Rich, the Botanist of the Expedition, in a note annexed to the specimens, suggests its relationship with *Canella* (another genus of doubtful place), guided probably by some similarity in sensible properties, and by the number and union of the stamens. There may be, indeed, a real, although not immediate, affinity between these two genera, notwithstanding the extrorsely adnate anthers and the very different ovules of *Canella*. I suspect, however, that *Vavæa* is scarcely to be separated from the *Meliaceæ*, from which its floral characters differ only in the stamens being (at least for the most part) above twice the number of the petals, and in the lesser union of their filaments. In the leaves of *Quirisia*, if I mistake not, traces of similar dots in the leaves may be discerned.

The specimen which I find figured (to which I have merely caused new and full details to be added), represents a form of the plant with larger leaves and stouter branchlets than that described by Mr. Bentham. Other specimens of the present collection have slender branchlets, and smaller leaves (only two or three inches in length), with a little sparse pubescence remaining on their lower surface; but there seems to be no specific difference between them. In both forms the sepals and petals vary from four to seven.

PLATE 16, *B.*—VAVÆA AMICORUM: flowering branch of a large-leaved form, of the natural size. Fig. 1. Diagram of a (pentamerous) flower. 2. An expanded (pentamerous) flower. 3. Pistil, with the andrœcium laid open and displayed. 4. A stamen, seen from within. 5. Exterior view of the same. 6. Vertical section of a flower, dividing the ovary, and displaying the ovules, &c. 7. Unripe fruit, with the persistent calyx. 8. Transverse section of the same.—The analyses variously magnified.

ORD. SAPINDACEÆ.

1. CARDIOSPERMUM, *Linn.*

1. CARDIOSPERMUM MICROCARPUM, *H. B. K.*

HAB. St. Jago, Cape de Verde Islands. Tahiti and Matia, Society Islands; in wild situations. Feejee Islands: apparently introduced. Gardner's and Birney's Islands.

A species now as widely diffused as *C. Halicacabum*, from which it differs chiefly in its much smaller and turbinate fruit; but perhaps only as a variety, as Blume, in Rumphia, 3, p. 184 (cited by Walpers) regards it.

2. CARDIOSPERMUM LOXENSE, *H. B. K.*

HAB. Peru, near Lima. (Apparently referable to this species; but with the mature pods perfectly glabrous.)

2. SERJANIA, *Plumier.*

1. SERJANIA CUSPIDATA, *Camb.*

Serjania cuspidata, Cambess. in St. Hil. Fl. Bras. Mer. 1, p. 356.
Paullinia Guarumima, Velloz. Fl. Flum. 4, t. 35.

HAB. Brazil: in hedges near Rio Janeiro. (In flower only.)

2. SERJANIA COMMUNIS, *Camb.? l. c.*

HAB. Brazil, in the Organ Mountains, near Rio Janeiro. (In flower only.)

3. PAULLINIA, *Linn.*

1. Paullinia multiflora, *Camb.*

Paullinia multiflora, Cambess. in St. Hil. Fl. Bras. Mer. 1, p. 379.

Hab. Brazil, in the Organ Mountains. (In flower only.)

At least this is the plant of Martius, distributed under the above name; but in some points it does not accord with the character given by Cambessedes.

2. Paullinia weinmanniæfolia, *Mart.*

Paullinia weinmanniæfolia, Mart.! in Flora, 20, Beibl. 2, p. 91; Walp. Repert. 2, p. 414.
P. discolor, Gardn.! in Hook. Lond. Jour. Bot. 1, p. 337.

Hab. Brazil, near Rio Janeiro. (In flower only.)

3. Paullinia rubiginosa, *Camb.?*

Paullinia rubiginosa, Cambess. in St. Hil. Fl. Bras. Mer. 1, p. 371?

Hab. Brazil, in the Organ Mountains.

The specimen (in flower only) nearly accords with the character of *P. rubiginosa*. The sparse teeth of the leaflets are tipped with a slender and setaceous cusp.

4. Paullinia falcata, *Gardn.*

Paullinia falcata, Gardn. in Hook. Lond. Jour. Bot. 1, p. 530.

Hab. Brazil, in the vicinity of Rio Janeiro.

Except that the racemes are many-flowered, and the wings of the fruit free from the style, I should take this for *P. meliæfolia*, Juss., with the figure of which the foliage closely agrees.

5. PAULLINIA BARBADENSIS, *Jacq.?*

HAB. Brazil, near Rio Janeiro. (In flower only.)

4. SCHMIDELIA, *Linn.*

1. SCHMIDELIA LÆVIS, *Camb.*

Schmidelia lævis, Cambess. in St. Hil. Fil. Bras. Mer. 1, p. 382.

HAB. Brazil, in the vicinity of Rio Janeiro.

2. SCHMIDELIA RACEMOSA, *Linn.*

HAB. Island in the Sooloo Sea. (In flower only.)

This is most likely the *Allophyllus ternatus* (*Schmidelia Cochinchinensis*, DC.), and the *Gemella trifoliata* (*Aporetica Gemella*, DC.) of Loureiro. *S. serrata*, DC., is perhaps the same species, as Wight and Arnott suspect.

3. SCHMIDELIA OBOVATA, Sp. Nov.

S. glabra; foliis trifoliolatis; foliolis obovatis membranaceis subdentatis; petiolis angulatis; racemis compositis; petalis filamentisque longissime barbatis.

Schmidelia glabra, Benth. in Hook. Lond. Jour. Bot. 2, p. 213, non *Ornitrophe glabra*, Roxb.

HAB. Upolu and Savai, Samoan Islands. Mangsi Islands, in the Sooloo Sea.

A branching shrub, about 12 feet high, *glabrous*, except a minute and deciduous pubescence on young parts. Stipules none. *Leaves trifoliolate*, on *angled petioles* of 2 or 3 inches in length. *Leaflets obovate*, ample, sometimes 5 or 6 inches in length and 3 or 4 in width, irregularly and mostly *obscurely toothed*, *membranaceous* in texture, rounded or acute and tapering at the base, more or less petiolulate; the apex obtuse, rounded, or sometimes obtusely acuminate. Peduncles shorter than the petiole. *Racemes compound*, or at least trifid, rarely simple, densely-flowered, shorter than the leaves. Flowers polygamous, about a line in diameter, on pedicels of a line or more in length. Sepals 4, orbicular-obovate, white. *Petals* 4, much shorter than the sepals, deltoid-ovate, unguiculate, with the margins involute-appendaged at the base, within *densely bearded* with very long, villose hairs. Glands of the disk 4, scale-like, two of them larger. Stamens 7 or 8, shorter than the sepals: *filaments sparsely bearded* with long hairs, like those of the petals; the didymous anthers also sparingly pilose. Ovary didymous, only one of the lobes ripening into a globose berry, of the size of a small pea.

This species indeed resembles the East Indian *S. glabra* (*Ornitrophe glabra*, Roxb. in Wall. Cat.), to which Bentham referred specimens from New Guinea, New Ireland, and Amboyna; but that has simple racemes, terete petioles, &c. To the present species apparently belongs Cuming's No. 1502, from the Philippine Islands. Our plant does not appear to accord with the characters of any of the species of *Allophyllus* cited by Walpers from Blume's Rumphia; a work which is not now accessible to me.

5. MOULINSIA, *Camb.*

1. MOULINSIA RUBIGINOSA, *Don.*

Sapindus rubiginosus, Roxb. Pl. Corom. 1, t. 62 (ex sp. Hort. Calc.); DC. Prodr. 1, p. 608; Wight & Arn. Prodr. Ind. Or. 1, p. 112.
S. fraxinifolius, DC. Prodr. 1, p. 608?
Moulinsia cupanioides, Cambess. Sapind. in Mem. Mus. Par. l. c. p. 27, t. 2?

HAB. Caldera, Mindanao, one of the Philippine Islands.

The inflorescence of the specimen is undeveloped: but it is plainly the same as the plant cultivated in the Calcutta Botanic Garden, under the name of *Sapindus rubiginosus*, Roxb. In this, the appendage of the petals is bearded with such long and dense woolly hairs as to render it questionable whether it can be the same as the species figured by Cambessedes, above cited.

6. HEMIGYROSA, *Blume.*

1. HEMIGYROSA PERROTTETII, *Blume.*

Hemigyrosa Perrottetii, Blume, Rumphia, 3, p. 165, fide Walp. Ann. 2, p. 212, ex char.

HAB. Philippine Islands: near Baños, Luzon.

The specimens (in flower only) well accord with Blume's character, as cited by Walpers. The fifth petal is destitute of the two-parted, very villous appendage, and is rather smaller than the others, which accord in character with those of *Erioglossum.*

7. SAPINDUS, *Linn.*

1. SAPINDUS? VITIENSIS, Sp. Nov.

S.? foliis glabris; rhachi aptera; foliolis tri–quadrijugis summisve bijugis ovato-oblongis paullo obliquis subacuminatis breviter petiolulatis; paniculis terminalibus amplis decompositis; sepalis inæqualibus; petalis ovatis cucullatis unguiculatis haud appendiculatis inferne ciliatis; filamentis 7–8 *inferne villosis.*

HAB. Rewa and Ovolau, Feejee Islands: common on the leeward coasts.

A tree "30 feet high," *glabrous*, except the inflorescence, which is clothed with a fine rusty tomentum; the bark of the branchlets warty.

Leaves with a *wingless rhachis*, abruptly pinnate. *Leaflets* 3 *or* 4 *pairs, or the uppermost fewer*, opposite or alternate, *ovate-oblong*, or lanceolate-oblong, tapering to a *more or less acuminate* or acute point, 3 to 5 inches long, 1½ to 2 inches wide, *somewhat oblique*, entire, chartaceous in texture, veiny, green and rather shining above, dull but little paler underneath, rounded at the base, or contracted into a *short partial petiole* (of 2 lines in length). *Panicle terminal, large, and decompound;* the flowers thickly clustered along its racemose branches, polygamo-diœcious. Pedicels very short. Calyx petaloid, apparently yellowish-white, 2 lines or more in diameter; the 5 *sepals unequal*, distinct, roundish-obovate, concave, imbricated in æstivation, glabrous, with ciliolate margins; the 2 exterior only half as large as the others. *Petals* 5, *ovate*, or deltoid-ovate, rather shorter than the larger sepals, white, *cucullate, destitute of an appendage, unguiculate;* the claw rather long, and, as well as the base of the lamina, *ciliate* with villous hairs. Disk complete, crateriform, 7–8-toothed. *Filaments* 7–8, *villous below the middle*, at length longer than the calyx in the sterile flowers, which alone occur in the collection. Abortive ovary three-lobed, three-celled, with a short and undivided style. Fruit not seen: the genus therefore doubtful.

At Eimeo, Society Islands, was collected the foliage apparently of a *Sapindus*, with a winged rhachis, and 6 to 8 narrowly oblong leaflets. It may be the *Sapindus saponaria* of Forster, from Easter Island, of which nothing farther is known.

8. CUPANIA, *Plumier.*

* *Oceanicæ.*

1. CUPANIA? (MISCHOCARPUS) FALCATA, Sp. Nov.

C. foliis 4–5-*foliolatis glabris; foliolis lanceolatis basi rotundatis sensim acuminatis falcatis; racemis spiciformibus densifloris pubescentibus; petalis calycem parvum adæquantibus hastato-trilobis intus inappendiculatis, lobis lateralibus incurvis margine villoso-barbatis; staminibus glabris; capsula obovoidea subtrigona glabra haud stipitata triloculari.*

HAB. Ovolau and Somu-somu, Feejee Islands: in forests.

"Tree 20 feet high;" the branches and foliage *glabrous*, except the young shoots, which are minutely pubescent. Leaves alternate, destitute of stipules, with petioles 2 to 4 inches long. *Leaflets* 4 *to* 8, commonly 6, *lanceolate, with a rounded base, gradually acuminate, falcate*, entire, rather pale, of the same hue both sides, veiny, chartaceous in texture, 3 to 6 inches long, 9 to 18 lines wide; the partial footstalks 2 to 4 lines long. *Racemes densely-flowered and spike-like*, axillary and subterminal, mostly simple, short-peduncled, *pubescent*, about the length of the petioles. Pedicels articulated with the rhachis, about 1½ lines long, subtended by a minute deciduous bract. Flowers polygamo-diœcious. *Calyx small*, a line in diameter, five-cleft; the lobes ovate-triangular, greenish and rather herbaceous in texture, minutely pubescent externally, valvate or nearly so in æstivation; the bud opening very early. *Petals* 5, very small when the calyx opens, *at length as long as the sepals, unappendaged within*, consisting of a transversely dilated *hastate-three-lobed* limb, raised on a slender claw, the *lateral lobes involute and villous-bearded on the margin*. *Stamens* 8, *glabrous*, purplish, inserted within the glabrous, crenate, and complete, fleshy disk: filaments equal, in the sterile flowers filiform and thrice the length of the calyx, in the fertile flowers scarcely exserted: anthers oblong. Ovary sessile, ovoid, pubescent, three-celled, with a single ascending ovule in cell: style none: stigma small, three-lobed. *Capsule obovoid* or turbinate, *obscurely three-angled, glabrous, not stipitate*, nor with a tapering base, 4 or 5 lines long, very obtuse, pointless, *three-celled*, loculicidally three-valved; the valves coriaceo-crustaceous, thick, smooth externally, densely villous inside. Seeds not seen, having all fallen from the open capsules.

This plant is a manifest congener of *Cupania apetala*, Labill. Sert. Austro-Cal. (judging from the figure), which must belong to the genus *Mischocarpus* of Blume; but I know not whether this author, in his Rumphia, has so referred it. From Walpers, Ann. Bot. 2, p. 216, I learn that Blume has there characterized a species, *Mischocarpus fuscescens*, with minute and caducous petals. If the lobes of the calyx are valvate or nearly so in æstivation in Blume's species, as they are in ours, the genus *Mischocarpus* would appear to be sufficiently distinct from *Cupania*.

2. Cupania (Dimereza) rhoifolia, Sp. Nov.

C. foliis 8–12-foliolatis glabris; foliolis oblongo-lanceolatis subacuminatis basi sæpius acutis subtus glaucescentibus; paniculis puberulis laxifloris; petalis orbiculatis exunguiculatis intus squamula bipartita villoso-barbata auctis; filamentis inferne pilosis; capsula profunde triloba.

Hab. Ovolau, Feejee Islands.

"Tree about 30 feet high," glabrous, except the young branchlets, &c., which are puberulent. Petiole with the rhachis 3 to 6 inches long, slender. *Leaflets from* 8 *to* 12, or rarely fewer, lanceolate or *oblong-lanceolate, more* or *less acuminate, mostly acute at the base*, or tapering into a short partial footstalk, green and rather shining above, with the midrib and veins tinged with purple, *glaucescent underneath*, chartaceous in texture, usually alternate, from 1½ to 3 inches long, and from 5 to 12 lines wide. *Panicles loosely flowered*, nearly equalling the leaves, somewhat compound, axillary and subterminal, minutely *puberulent*. Pedicels a line long. Flowers polygamous. Calyx petaloid (white?); the 5 orbicular-obovate sepals rather unequal, imbricated in æstivation, glabrous, a line long. *Petals* 5, *orbicular*, shorter than the sepals, sparingly ciliate, *not unguiculate*, rather longer than their *deeply two-parted appendage or squamula*, which is *villous-bearded* on the inside, and especially on the margins, each lobe bearing a gland at its tip. Disk complete, fleshy, undulate. Stamens in the sterile flowers 8; the *filaments sparsely hairy below*, exserted, slender, bearing oval anthers. Fertile flowers not seen. *Capsule deeply three-lobed*, glabrous, abruptly stipitate (the stipe about a line and a half long); the lobes wing-like, wider than long (4 or 5 lines in breadth), chartaceo-coriaceous in texture, loculicidal, glabrous within. Seeds subglobose, 3 lines in diameter, enclosed in a fleshy arillus.

This species is evidently related to *Dimereza glauca*, Labill. (the *Cupania glauca* of Cambessedes); the structure of the flowers being wholly similar.

3. Cupania Brackenridgei, Sp. Nov.

C. glabella; foliis 6–8-*foliolatis; foliolis oblongis vel sublanceolatis subacuminatis basi attenuatis crebre penninerviis subtus badiis; paniculis compositis folio brevioribus; capsula compressa obovato-cuneata truncata biloculari.*

Hab. Ovolau, Feejee Islands.

A shrub or small tree, *nearly glabrous;* the young shoots, petioles, &c., clothed with a minute rusty scurf rather than pubescence. Petioles angled, much dilated at their insertion. *Leaflets* 6 *or* 8, varying from *oblong* or ovate-oblong *to broadly lanceolate, more or less acuminate, tapering at the base* into a short and margined partial petiole, 2½ to 4 inches long, chartaceous, glabrous or nearly so, entire, *thickly feather-veined* (the veins conspicuous and more or less reticulated), the upper surface pale green, the lower tinged of a *brownish or chestnut hue.* Flowers not seen. Fruiting *panicles compound, shorter than the leaves,* mostly axillary, loose. *Capsules compressed, obovate-wedge-shaped,* approaching to obcordate, but the apex is only *truncate,* and tipped with a persistent style, 5 lines in length and breadth, acute at the base, not at all stipitate, clothed with a very minute rusty scurf, *two-celled,* crustaceous in texture; the whole interior lined with a dense coating of bristly hairs. Seeds (immature) solitary, ascending from near the base of the cell, showing only a rudimentary arillus.

4. Cupania leptobotrys, Sp. Nov.

C. glabella; foliolis 14–20 *lanceolato-oblongis acuminatis basi rotundatis longiuscule petiolulatis glabris concoloribus; paniculis gracillimis racemifloris ramosis folio æquilongis cum petiolis junioribus tomentulosis; floribus polygamo-monoicis; calyce quinquepartito persistente petalis squamæformibus multoties majoribus; antheris* 10 *subsessilibus; capsula obcordato-triloba stipitata.*

Hab. Ovolau, Feejee Islands.

A shrub "10 to 12 feet high," *nearly glabrous*, except the young shoots, inflorescence, and petioles, which are *tomentulose* with a close and soft, more or less deciduous, rusty down. Leaves, including the petiole, one or 2 feet long, usually abruptly pinnate. *Leaflets* 14 *to* 20, opposite or alternate, *lanceolate-oblong, acuminate, rounded at the base*, entire, from 3 to 7 inches long, 1½ to 2 inches wide, membranaceous, loosely veiny, *glabrous, of the same green hue both sides;* the slender partial petioles half an inch or more in length. *Panicles very long and slender*, usually *equalling the leaves*, axillary, sparingly *branched*, loosely flowered; the *flowers racemose*, on pedicels of 2 or 3 lines in length, *polygamo-monœcious*. *Calyx* minutely ferruginous-tomentose externally, *five-parted*, 3 lines broad when expanded; the lobes orbicular-obovate, concave, nearly equal, imbricated in æstivation, *persistent* at the base of the unripe fruit. *Petals minute and scale-like, many times shorter than the calyx*, shorter than the *almost sessile oblong anthers* of the male flowers, not unguiculate, glabrous, except a beard on the minutely bi-appendiculate base within. Stamens 10, at least in the male flowers (the female flowers not seen), inserted within the small and thin disk. *Capsule obcordate-three-lobed*, three-celled, tipped with a very short style in the sinus, tomentulose with a ferrugineous pubescence, of a corky texture, somewhat wrinkled when dry, nearly an inch long, including the *stipe* of 2 lines in length, the lobes somewhat carinate, loculicidal; the valves densely pubescent within. Seeds solitary, ascending from near the base of the cell, enclosed in a membranaceous arillus.

5. CUPANIA LENTISCIFOLIA, *Pers.*

Cupania lentiscifolia, Pers. Ench. 1, p. 413; DC. Prodr. 1, p. 614; Cambess. Sapind. l. c.
Guioa lentiscifolia, Cav. Ic. Pl. 4, p. 49, t. 373.
Guaiacum dubium, Forst. Prodr. Fl. Ins. Austr. p. 32.

HAB. Tongatabu, Friendly Islands. Upolu, Navigators' Islands.

The specimen from Tongatabu has neither flowers nor fruit: that from the Samoan Islands has a few flower-buds. If I mistake not it is likewise the *Guaiacum dubium* of Forster, whose specimen, in the herbarium of the British Museum, is in fruit only.

At Upolu, Navigators' Islands, leafy specimens were collected of an apparently Sapindaceous shrub, without flowers or fruit; the leaves with about five pairs of ovate-lanceolate and acuminate leaflets, of a thin texture, smooth and green on both sides.

* * *Philippenses.*

6. Cupania? Richii, Sp. Nov.

C.? ramulis pubescentibus; foliis paripinnatis 2–3-jugis; foliolis ovalibus membranaceis glabris concoloribus; paniculis in axillis fasciculatis, fructiferis petiolum æquantibus; capsula subcompressa obovata glabra biloculari haud angulata apice retusa.

Hab. Near Caldera, Mindanao, Philippine Islands. (In fruit only.)

For the want of flowers the genus of this plant cannot be ascertained; but the fruit accords with that of several species of *Cupania*. The stem is glabrous; but the young *branches, &c.,* are *pubescent. Leaflets* 2 *or* 3 *pairs, oval,* more or less acuminate, rounded at the base, on very short partial petioles, *glabrous, membranaceous* in texture, green and of the *same* hue both sides, very veiny, from 4 to 7 inches long. *Fruiting panicles fascicled in the axils, not exceeding the petiole,* pubescent, apparently many-flowered. The vestiges of a minute five-parted calyx are distinguishable at the base of the fruit. This is a smooth and *glabrous, moderately compressed, obovoid, two-celled capsule,* 8 or 9 lines in length, with a stipe a line and a half long, *retuse at the* apex, and apiculate with a short style, the edges rather acute, but *not angled* nor produced, loculicidal; the valves crustaceous, and with a thin and separable cartilaginous endocarp, which is tomentose inside. Only unripe seeds occur: these are solitary in each cell, ascending, inserted above the base, with a fleshy arillus forming around the hilum.

There is another Sapindaceous plant from Caldera, with male flowers only, its inflorescence similar to the foregoing species, and with very large bijugate leaflets. It is undeterminable from the present materials.

* * * *Novo-Hollandicæ.*

7. CUPANIA ANACARDIOIDES, *A. Rich.*

Cupania anacardioides, A. Rich. Bot. Voy. Astrolab. 2, p. 33, t. 13.

HAB. Puen Buen, New South Wales. (In fruit.)

8. CUPANIA SUBCINEREA.

C. foliolis 2–6 oblongo-lanceolatis utrinque subacuminatis subsessilibus parce serratis crebre penninerviis supra nitidis subtus ramulis petiolisque cinereo-puberulis; paniculis folio brevioribus; petalis minimis; capsula 2–3-loculari 2–3-loba glabra.

Sapindus cinereus, A. Cunningh. in Herb. Hook.

HAB. Hunter's River, and Puen Buen, New South Wales.

A shrub or small tree. Leaves abruptly pinnate: the *leaflets varying from one to 3 pairs, oblong-lanceolate*, or when only a single pair oblong or oval, *rather acuminate at both ends, scarcely petiolulate*, coarsely and *sparingly serrate*, especially above the middle, rarely entire, from 2 to 4 inches long, 9 to 15 lines wide, chartaceous in texture, conspicuously and *thickly feather-veined;* the upper surface glabrous and shining; the *lower minutely cinereous-pubescent*, as are the petioles, branchlets, and inflorescence, at first brownish in hue, at least in the dried specimens, at length pale. Flowers very small, in axillary *panicles*, which are *shorter than* the leaves. Calyx five-cleft, minutely pubescent. *Petals minute*, much smaller than the lobes of the calyx, apparently inappendiculate. Stamens 10? with very short filaments. *Capsule 2–3-celled, 2–3-lobed*, or tricoccous, at first apparently fleshy, at length loculicidal, glabrous, not at all stipitate, subtended at the base by the minute persistent calyx; the lobes rounded; the valves glabrous inside. Seed globose, invested with a fleshy arillus.

This species was collected by Mr. Cunningham at Moreton Bay. I am not aware that it has been anywhere published; and our materials for describing it are imperfect. There is already a *Cupania cinerea*.

* * * * *Brasilienses.*

9. CUPANIA ANACARDIÆFOLIA, *Gardn.*

Cupania anacardiæfolia, Gardn. in Hook. Lond. Jour. Bot. 2, p. 338.

HAB. Brazil; in the Organ Mountains, not far from Rio Janeiro. (In fruit only.)

9. NEPHELIUM, *Linn.*

1. NEPHELIUM PINNATUM, *Camb.*

Nephelium pinnatum, Cambess. Mem. Sapind. (in Mem. Mus. 18), p. 30.
Pometia pinnata, Forst. Char. Gen. t. 54, & Prodr. Fl. Ins. Austr. p. 74.
Aporetica pinnata, DC. Prodr. 1, p. 610.

HAB. Tongatabu, and Feejee Islands; planted around dwellings. (Fruit sweet and edible.)

10. OTOPHORA, *Blume.*

1. OTOPHORA BLANCOI, *Blume.*

Otophora Blancoi, Blume, Rumphia, 3, p. 142, in obs. ex Walp. Ann. Bot. 2, p. 222.
Sapindus baccatus, Blanco, Fl. Filip. p. 290.
Otolepis nigrescens, Turczan. in Bull. Soc. Nat. Mosc. 1848, & Flora, 33, p. 708?

HAB. Baños, near Manilla, Luzon.

The specimen bears only unexpanded flower-buds. On the whole it so nearly accords with the character of Turczaninow's *Otolepis nigrescens*, founded on Cuming's No. 1922 (which I have not seen) from Luzon, that I suppose it to be the same species. But the genus is plainly identical with Blume's *Otophora*, which is probably the earlier published, and with a considerable number of species. This name, therefore, I adopt, although too like *Otiophora*, Zucc. The stipules, if such they be, of our plant are over an inch in length.

11. ALECTRYON, *Gærtn.*

1. ALECTRYON EXCELSUM, *DC.*

Alectryon excelsum, DC. Prodr. 1, p. 617; Hook. Ic. Pl. t. 570; Hook. f. Fl. N. Zeal. p. 38.

HAB. Waia-ruru Bay, &c., New Zealand. (In fruit.)

12. DODONÆA, *Linn.*

1. DODONÆA VISCOSA, *Linn.*

HAB. Rio Janeiro, Brazil (the form named *D. Brasiliensis* by Schlechtendal). Peru, between Lima and Yaso (near the *D. Schiedeana*, Schlecht.). Bay of Islands, New Zealand. (Leaves only.) Tahiti and Matia, Society Islands. (Several forms: one, from Matia, has large and mostly retuse leaves, and the fruit more deeply notched at both ends than usual. Another, in fruit, has some of the capsules surmounted by a long exserted style, of 3 or 4 lines in length! as in the flowers of the *D. viscosa*, Cav. Ic. t. 327 (*D. Jamaicensis*, DC.); while other fruits of the same panicle have the usual short style, not exserted beyond the sinus of the wing.) Tutuila, Samoan Islands. Sooloo Islands. Caldera, Mindanao. (Large-fruited forms, mostly with obtuse leaves, referable to *D. Burmanniana*, DC.) Feejee Islands. Sandwich Islands: several widely different forms. On the coast of Hawaii and on the mountains behind Honolulu, Oahu, some ordinary states of the species were collected; at the latter locality also the (probably abnormal) form with elongated styles, some of them 5 or 6 lines in length! Similar specimens were gathered at Oahu by Gaudichaud, in the Voyage of the Bonite.

2. DODONÆA SPATHULATA, *Smith.*

Dodonæa spathulata, Smith, in Rees' Cycl. no. 2; DC. Prodr. 1, p. 616.

HAB. Sandwich Islands. On the mountains of Hawaii, near the crater Lua Pele, and on Mouna Loa, at the elevation of 8,000 feet. Mountains of Maui, on the eastern side (a narrow-leaved variety).

Although it would be difficult to point out any absolute characters, yet I cannot but regard the specimens before me as belonging to a species different from *D. viscosa;* and I presume they are rightly referred to Smith's *D. spathulata*, which is said to be smaller than the former. The leaves, in our numerous specimens, vary from an inch to at most 2 inches in length, and from spatulate-obovate to narrowly oblanceolate, the apex mucronate, the base tapering into a short petiole; their texture dry and rather coriaceous; the surface often somewhat furfuraceous, probably from the exsiccation of the viscous exudation. The racemes or corymbs are simple, short, and few-flowered. The orbicular fruits are pretty broadly winged, half an inch or more in diameter, glabrous or nearly so, with scarcely any notch at the base, but with a deep and very broad one at the apex. The style is usually very short; but in one instance I find it elongated, as in the peculiar state of *D. viscosa*, mentioned above.

3. DODONÆA ERIOCARPA, *Smith, l. c.?*

HAB. Sandwich Islands. District of Waimea, Hawaii.

To this I doubtfully refer two imperfect specimens, entirely destitute of fruit, but with minutely hairy branchlets, &c., which I should have taken as a form of *D. viscosa*. None of our specimens from the interior of the Sandwich Islands exhibit a pubescent or hairy fruit.

4. Dodonæa triquetra, *Andr.*

Dodonæa triquetra, Andr. Bot. Rep. t. 230; DC. Prodr. 1, p. 617.

Hab. Sydney, New South Wales. Ovolau, Feejee Islands.

Most of the styles, in a flowering specimen from Sydney, are prolonged to the length of half an inch, many times exceeding the rest of the flower. This is doubtless an abnormal state. The plant from the Feejee Islands appears to be the same.

5. Dodonæa cuneata, *Smith.*

Dodonæa cuneata, Smith, l. c.; Rudge, in Trans. Linn. Soc. 11, p. 296, t. 19, non DC.?

Hab. Near Sydney, New South Wales.

The specimens, in fruit only, have the pedicels fully as long as the capsules; while in DeCandolle's plant the flowers are said to be subsessile. Our plant accords very well with Rudge's figure. It occurs in Cunningham's collections under the name of *D. conferta.*

6. Dodonæa neriifolia, *A. Cunn. ined.*

Hab. Sydney, New South Wales.

This is the plant so named by A. Cunningham in Hooker's herbarium. I do not find it anywhere published; and our specimens, with male flowers only, are not sufficient for characterizing it.

7. Dodonæa calycina, *A. Cunn. ined.*

Hab. With the preceding species.

Apparently a narrowly linear variety of *D. calycina*, A. Cunningham, in Hooker's herbarium, which is probably still unpublished.

ORD. MALPIGHIACEÆ.

1. BYRSONIMA, *Rich.*

1. BYRSONIMA SERICEA, *DC.*

Byrsonima sericea, DC. Prodr. 1, p. 580; A. Juss. Monogr. Malp. 2, p. 19.
B. Brasiliensis, Griseb. in Linnæa, 13, p. 255, ex A. Juss.

HAB. Brazil, near Rio Janeiro; common on the coast.

2. BUNCHOSIA, *Rich.*

1. BUNCHOSIA MARTIANA, *A. Juss.*

Bunchosia Martiana, A. Juss. Monogr. Malp. 2, p. 80.
Malacmœa fluminensis, Griseb. in Linnæa, 13, p. 248.
Malpighia maritima, Velloz. Fl. Flum. 4, t. 173.

HAB. Brazil, near Rio Janeiro, or in the Organ Mountains.

2. BUNCHOSIA ARMENIACA, *Rich.*

Bunchosia Armeniaca, Rich. in Mem. Mus. 18, p. 481; A. Juss. l. c. p. 78.
Malpighia Armeniaca, Cav. Diss. p. 410, t. 238.

HAB. Peru. Gathered in a garden at Lima, with immature fruit, which resembles a young apricot.

3. THRYALLIS, *Mart.*

1. Thryallis rotundifolia, Sp. Nov.

T. foliis orbiculatis subtus farinoso-incanis; racemis cymoso-paniculatis folia vix superantibus; coccis acutissime cristatis.

Hab. Brazil, near Rio Janeiro. (Also in the Brazilian collection of Pohl, No. 1539.)

A species intermediate in some respects between *T. brachystachys* and *T. latifolia;* but distinguished from both by its *orbicular leaves,* which are not in the least cordate at the base; they are rounded at both ends, or retuse at the apex, 1½ to 2 inches in length and breadth, glabrous above, or stellately puberulent only when very young, *beneath whitened* with a close *farinose* tomentum: there are usually a pair of hemispherical glands at the base of the midrib, and often one terminating its apex. Petiole 3 lines long. Stipules minute, caducous. Inflorescence and young branches minutely tomentose or farinose. *Racemes cymose-paniculate* at the end of the branches, *scarcely exceeding the leaves.* Sepals occasionally 6, ferrugineous-tomentose; in flower, ovate-rotund and barely 3 lines long; in fruit, becoming lanceolate-oblong and 5 or 6 lines in length. Petals as in *T. brachystachys.* Stamens 10, or occasionally 12. *Cocci sharply crested,* more so than in *T. latifolia,* and the sides less strongly varicose; otherwise nearly similar. They appear externally to be fertile and perfect; but the cavity in those examined is nearly filled with the fibrous-spongy growth from the endocarp, or placenta, which was noticed by Martius and Jussieu in *T. latifolia.*

4. STIGMAPHYLLON, *A. Juss.*

1. Stigmaphyllon vitifolium, *A. Juss.*

Stigmaphyllon vitifolium, A. Juss. in St. Hil. Fl. Bras. Mer. 3, p. 50, & Monogr. Malp. 2, p. 105.

HAB. Brazil; common in the Organ Mountains, near Rio Janeiro.

Some of the leaves are slightly, and others not at all lobed; thus rendering it probable that *S. Gaudichaudianum*, A. Juss. is only a form of this species.

2. STIGMAPHYLLON CILIATUM, *A. Juss.*

Stigmaphyllon ciliatum, A. Juss. in St. Hil. Fl. Bras. Mer. 3, p. 49, & Monogr. l. c.

HAB. Near Rio Janeiro. (In flower only.)

3. STIGMAPHYLLON TOMENTOSUM, *A. Juss. l. c.*

HAB. Near Rio Janeiro: common on rocks along the shore.

5. BANISTERIA, *Linn., A. Juss.*

1. BANISTERIA CAMPESTRIS, *A. Juss.*

Banisteria campestris, A. Juss. in St. Hil. Fl. Bras. 3, p. 36, t. 168, & Monogr. Malp. 2, p. 145.

HAB. Brazil; in the Organ Mountains.

6. PEIXOTOA, *A. Juss.*

1. PEIXOTOA GLABRA, *A. Juss.*

Peixotoa glabra, A. Juss. in St. Hil. Fl. Bras. Mer. 3, p. 60, t. 172, & Monogr. Malp. 2, p. 174, t. 13.

HAB. Brazil; near Rio Janeiro, or probably in the Organ Mountains.

7. HETEROPTERYS, *Kunth, A. Juss.*

1. HETEROPTERYS METALLOCHROA, *A. Juss.*

Heteropterys metallochroa, A. Juss. Monogr. Malp. 2, p. 195.

HAB. Brazil; near Rio Janeiro.

2. HETEROPTERYS SERICEA, *A. Juss.*

Heteropterys sericea, A. Juss. in St. Hil. Fl. Bras. Mer. 3, p. 29, & Monogr. Malp. l. c.
Banisteria sericea, Cav. Diss. p. 420, t. 258.

HAB. Brazil; near Rio Janeiro.

3. HETEROPTERYS NITIDA, *Kunth.*

Heteropterys (Heteropteris) nitida, Kunth, in H. B. K. Nov. Gen. & Spec. 5, p. 163; A. Juss. l. c.
Banisteria nitida, Lam. Dict. 1, p. 369; Cav. Diss. t. 244.

HAB. Brazil; near Rio Janeiro, and in the Organ Mountains: two forms.

4. HETEROPTERYS CHRYSOPHYLLA, *Kunth, l. c.*

Banisteria chrysophylla, Lam. Dict. 1, p. 368; Cav. Diss. p. 422, t. 245.
B. monoptera, Velloz. Fl. Flum. 4, p. 153.

HAB. Brazil; near Rio Janeiro.

5. HETEROPTERYS VENOSA, *Griseb.*

Heteropterys venosa, Griseb. in Linnæa, 13, p. 230; A. Juss. Monogr. Malp. 2, p. 217.
H. laurifolia, Gardn. in herb. Hook.; non A. Juss.

HAB. Brazil; in the Organ Mountains, and also near Rio Janeiro.

6. HETEROPTERYS MEGAPTERA, *A. Juss. l. c.?*

HAB. Brazil; with the preceding. In flower only.

8. HIPTAGE, *Gærtn.*

1. HIPTAGE JAVANICA, *Blume?*

Var. *crista dorsali fructus in alam alis lateralibus minorem evoluta.*

HAB. Somu-somu and Naiau, Feejee Islands.

The diagnosis of the species of *Hiptage* is certainly difficult, as M. de Jussieu remarks. The present specimens accord very well with the imperfect character of *H. Javanica;* having oval-oblong or ovate leaves (some of them moderately acuminate, but others very obtuse), and flowers (apparently whitish) only half as large as those of *H. Madablota;* but the fruit, which, according to Jussieu, is nearly destitute of a crest in Blume's plant, in ours has the *crest extended into a wing fully half as large as the lateral wings*, and similar in shape. It exactly resembles that of *H. Madablota*, as figured by Cavanilles at fig. *f* (Cav. Diss. t. 263), the proper wings, too, being narrower than they are represented by Jussieu (Monogr. Malp. t. 16). Probably the want of a crest or dorsal wing is no more constant in *H. Javanica*, should the small flowers, &c., prove adequately to distinguish it, than in the original species. The petals are fimbriate, and the tenth stamen much longer and larger than the others, in our specimens; just as in *H. Madablota.*

2. HIPTAGE MYRTIFOLIA, Sp. Nov. (Tab. 21.)

H. foliis lanceolato-ellipticis oblongisve coriaceis nitidis; racemis paucifloris; petalis roseis; staminibus 5 *anticis majoribus subæquilongis* *arcuatis; alis fructus obovatis brevibus, crista dorsali quoque in alam producta.*

Var. α. *foliis* 1–2 *poll. longis crassiusculis rigidis haud perspicue venosis.* (Tab. 21, *A, B.*)

Var. β. *foliis* 3–4 *poll. longis tenuioribus magis venosis.* (Tab. 21, *C.*)

Hab. Ovolau and Vanua-levu, Feejee Islands.

A climbing shrub; glabrous, except the youngest shoots and especially the inflorescence, which are more or less beset with fine and close-pressed Malpighiaceous hairs; the bark of the branchlets thickly verrucose, like the other species, with lenticels or small warts. *Leaves lanceolate-elliptical or oblong, coriaceous,* more or less acute at both ends, but scarcely acuminate, often obtuse at the base, sometimes elliptical and very obtuse at both ends, *shining,* especially the upper surface, *pretty thick and rigid* and only one or 2 inches long in var. α., the veinlets inconspicuous; in var. β. rather thinner and veiny, 3 or 4 inches long, dotted with a few glands along the margin on the under side: the petiole 2 lines long. *Racemes few-*(4–8-)*flowered,* axillary and terminal, short-peduncled, sometimes paniculate by the abortion of the upper rameal leaves. Calyx as in the preceding; the gland on the posterior sepal very large and decurrent on the slender pedicel. *Petals* very concave, *rose-coloured* or light purpel, at least on the inner side, minutely silky-pubescent outside, orbicular, less fringed than those of *H. Madablota,* but with the margins more or less erose and ciliate, especially those of the exterior petal (which strongly overlaps the others in the bud), 5 or 6 lines in length. *Stamens* 10, the filaments of the 5 *anterior and larger ones nearly equal in length* and thickness, *incurved,* at length exserted; 2 or 3 of the others equally stout but shorter; the remainder still shorter and more slender. Style elongated and circinnate: no abortive styles seen. Ovary deeply three-lobed, three-celled, silky-hirsute. Fruit four-winged; the *dorsal crest being produced into a wing* of about 3 lines in width, and fully half as large as the lateral ones, the terminal or upright wing larger, broadly *obovate,* obtuse or retuse, 7 to 9 lines in length, minutely strigose-puberulent. Seed somewhat twisted, as well as reniform-incurved. Cotyledons very unequal; the inner one much smaller.

I am unable properly to compare this with *H. laurifolia*, which, from Jussieu's description, appears to have very similar stamens.

PLATE 21.—HIPTAGE MYRTIFOLIA. *A.* Branch of var. *α.* in flower: *B.* the same, in fruit. Fig. 1. Diagram of the flower. 2. A flower-bud. 3. A detached exterior petal. 4. Flower-bud, with the petals and limb of the calyx removed, showing the proportion of the stamens, &c. 5. An anther, inside view. 6. The same, seen from the outside. 7. Flower, with the petals and stamens removed, showing the pistil. 8. Stigma and apex of the style, at anthesis. 9. Vertical section of the flower, through the ovary. 10. Dorsal view of a carpel, in fruit. 11. The same, with a lateral wing cut away, exposing the seed, and showing the persistent style. 12. A seed. 13. Vertical section through the embryo. 14. Embryo detached.—All the details, except Fig. 10, more or less magnified.—*C.* A branch of the var. *β.* of the natural size.

9. TETRAPTERYS, *Cav.*, *A. Juss.*

1. TETRAPTERYS ROTUNDIFOLIA, *A. Juss.*

Tetrapterys rotundifolia, A. Juss. in St. Hil. Fl. Bras. Mer. 3, p. 6, t. 161, & Monogr. Malp. 2, p. 274, t. 18.

HAB. Brazil; near Rio Janeiro. (In fruit.)

2. TETRAPTERYS PUNCTULATA, *A. Juss. l. c.*

HAB. Brazil; in the Organ Mountains, near Rio Janeiro.

The specimen, in flower only, accords with the plant of Sellow (*Hiræa glabra*, Spreng.), of Pohl, &c. The leaves are minutely pellucid-punctate, but show no black dots.

3. TETRAPTERYS MOGORIIFOLIA, *A. Juss. l. c.*

HAB. Brazil, near Rio Janeiro: apparently the var. *platyptera.*

4. Tetrapterys Guilleminiana, *A. Juss. l. c.*

Hab. Brazil; with the preceding species.

10. HIRÆA, *Jacq.*

1. Hiræa Gaudichaudiana, *A. Juss.*

Hab. Organ Mountains, Brazil. (In flower only.)

In the collection from Rio Janeiro there is a specimen, too incomplete for determination, which much resembles *Hiræa rigida*, A. Juss., but apparently does not belong to that species.

Ord. ERYTHROXYLACEÆ.

1. ERYTHROXYLON, *P. Browne.*

1. Erythroxylon pulchrum, *St. Hil.*

Erythroxylon pulchrum, St. Hil. Fl. Bras. Mer. 2, p. 94; Mart. Erythrox. (in Abhandl. Bayer. Akad. 3) p. 100.

Hab. Brazil, near Rio Janeiro. (In fruit.)

2. Erythroxylon nitidum, *Spreng.*

Erythroxylon nitidum, Spreng. Syst. 2, p. 390; Mart. Erythrox. p. 111.
E. deciduum & E. nanum, St. Hil. Fl. Bras. Mer. 2, p. 95, 97.

Hab. With the preceding. (The bractlets in a diseased condition.)

ORD. VITACEÆ.

1. CISSUS, *Linn.*

1. CISSUS QUINQUEFOLIA, *Sims.*

Cissus quinquefolia, Sims, Bot. Mag. t. 2443; St. Hil. Fl. Bras. Mer. 1, p. 346; non Pursh.

HAB. Brazil, near Rio Janeiro.

In foliage this plant bears a striking resemblance to our Virginia Creeper (*Ampelopsis quinquefolia*); but the flowers are those of *Cissus*, being tetramerous, and with a fleshy disk surrounding the ovary.

2. CISSUS SYLVATICA, *Camb.*

Cissus sylvatica, Cambess. in St. Hil. Fl. Bras. Mer. 1, p. 345.

HAB. With the preceding. (A broad-leaved variety; the same as Gardner's No. 344.)

3. CISSUS DEFICIENS, *Hook. & Arn.*

Cissus deficiens, Hook. & Arn. in Bot. Misc. 3, p. 160; Gay, Fl. Chil. 1, p. 377.

HAB. Chili; in ravines, near Valparaiso. (Probably not distinct from *C. striata*, to which Bertero referred it.)

4. CISSUS ANTARCTICA, *Vent.*

Cissus Antarctica, Vent, Choix. t. 21; DC. Prodr. 1, p. 629.

HAB. New South Wales; in the vicinity of Woolongong.

5. CISSUS HYPOGLAUCA, Sp. Nov.

C. glabra; foliis digitato-quinquefoliolatis; foliolis ovalibus oblongisve apicem versus subserratis acuminatis petiolulatis subcoriaceis supra lucidis subtus albo-glaucis; cymis compositis.

HAB. New South Wales, near Sydney.

A *glabrous* vine, with rather stout branches. Petioles and peduncles 1½ to 2 inches long. *Leaflets* 5, *digitate*, conspicuously *petiolulate* (the partial petioles 6 to 12 lines long, except those of the two lateral leaflets, which are 3 or 4 lines long), *oval or oblong*, 3 or 4 inches in length, abruptly *acuminate, sparingly serrate* with a few small and sharp teeth above the middle, rounded or obtuse at the base, *rather coriaceous* in texture, reticulated-veiny, bright green and rather *shining above, glaucous-white underneath. Cymes compound*, ample, rather loosely flowered. Calyx truncate. Petals 4 or 5. Disk fleshy, slightly 4–5-lobed, closely surrounding the ovary.

It is singular that so conspicuous a plant should have escaped notice in the neighbourhood of Sydney; but I do not find the species described, nor does it occur in the Hookerian herbarium.

6. CISSUS GENICULATA, *Blume?*

Cissus geniculata, Blume, Bijdr. p. 184?

HAB. Luzon, at Baños, near Manilla. Feejee Islands, at Sandalwood Bay. (From both habitats without flower or fruit, and therefore undeterminable.)

7. CISSUS VITIENSIS, Sp. Nov.

C. glabra; foliis trifoliolatis; foliolis subcarnosis ovatis seu ovalibus petiolulatis acuminatis dentato-serratis; cymis brevissime pedunculatis.

Hab. Feejee Islands. At Sandalwood Bay, Vanua-levu, with the preceding, according to the ticket annexed to the specimens: but in Dr. Pickering's *manuscript* notes both are said to have been gathered on Ovolau.

Only a wretched specimen occurs in the collection, with fruit, but without flowers; which I am forced thus to characterize, being unable to identify it with any described species. It is *glabrous* and *trifoliolate,* with *rather fleshy, ovate or oval, and acuminate leaflets,* from 2 to 3 inches long and from one and a half to 2 inches wide, sparingly and coarsely *toothed, petiolulate.* The fruiting *cymes* are *very short-peduncled:* the berries are obovoid, in their dried state, and nearly half an inch in length.

8. Cissus acuminata, Sp. Nov.

C. glabella; foliis pedato-quinquefoliolatis nunc fere trifoliolatis; foliolis membranaceis ovatis seu ovali-oblongis basi acutis apice eximie acuminatis inæqualiter serratis; pedunculis gracilibus laxifloris.

Hab. Ovolau, Feejee Islands.

A rather slender and *nearly glabrous* vine, with *pedately five-foliolate leaves;* or sometimes one or both the lateral leaflets are undivided. Petioles slender, one and a half to 3 inches long. *Leaflets membranaceous* in texture, one and a half to 2½ inches long, *ovate or oval-oblong,* inclining to rhomboidal, with an *acute base,* and a *long-acuminate apex, irregularly serrate,* the teeth mucronate-tipped: the middle leaflet is borne on a partial petiole of half an inch in length; the lateral are less petiolulate. *Peduncle* slender, 2 inches long; the cyme small and loosely flowered. Flower-buds less than a line in length. Fruit not seen.

There is in the collection, besides, an imperfect specimen, which I cannot identify, of a *Cissus* with pedate leaves, which is ticketed as from the Bay of Islands. But no other collectors, so far as I am aware, have met with any plant of this family in New Zealand.

2. LEEA, *Linn.*

1. Leea sambucina, *Linn.*

Leea Staphylea, Roxb.; Wall. Cat.; Wight, Ic. Pl. Ind. Or. t. 78.
L. Manillensis, Walp. Rel. Meyen. p. 314.

Hab. Philippine Islands: Luzon and Mindanao. Feejee Islands: Ovolau and Muthuata; common, under several forms.

Ord. RHAMNACEÆ.

1. VENTILAGO, *Gærtn.*

1. Ventilago? Vitiensis, Sp. Nov.

V. glaberrima; foliis ovato-oblongis obtuse acuminatis nitidis venulis tenuibus transversis eximie reticulatis; floribus longiuscule pedicellatis.

Hab. Feejee Islands; on the top of a mountain in Muthuata.

A *very glabrous*, shrubby plant, climbing by its somewhat cirrhose young branches. *Leaves ovate-oblong*, varying to ovate-lanceolate, *obtusely acuminate, shining*, entire, or obscurely undulate-repand, rounded at the base, from 2 to 4 inches long, chartaceous in texture, loosely pinnately veined; the primary veins about 6 on each side, curved; the *fine veinlets beautifully reticulated* in narrow transverse meshes. Petioles 2 or 3 lines long. Stipules minute, subulate. Racemes axillary, elongated, simple or panicled, leafless, glabrous;

the rhachis filiform, bearing interrupted fascicles of *flowers on rather slender pedicels* (about 2 lines long). Calyx flat, glabrous, a line and a half in diameter after expansion, rather thin. Stamens not longer than the convolute petals. Style short, flattish, emarginate, in the oldest flowers showing some disposition to enlarge. Fruit wholly unknown: so that the genus cannot be positively determined.

2. ZIZYPHUS, *Tourn.*

1. Zizyphus Jujuba, *Lam.*

Hab. St. Jago, Cape de Verde Islands. Indigenous?

3. CONDALIA, *Cav.*

1. Condalia lineata, Sp. Nov.

C. glabra; ramis divaricatis spinosis; foliis spathulatis vel obovatis mucronatis crasso-coriaceis supra aveniis subtus nervoso-lineatis; drupa oblonga.

Hab. Rio Negro, North Patagonia.

A much branched, *spinose* shrub, entirely *glabrous* throughout; the *branches divaricate*, alternate. *Leaves* alternate, or mostly fascicled on alternate spurs, *spatulate*, *obovate*, or oblong-obovate, slightly petioled, from 2 to 5 lines in length, *mucronate*, or those of young branches conspicuously and abruptly cuspidate-acuminate, of a *thick* and *coriaceous* texture, entire, the *upper surface veinless, the lower lineate* with 3 or 4 broadish and impressed *nerve-like* veins on each side of the midrib, which is scarcely more prominent than the veins; the intervening spaces narrow. Flowers not seen, except the occasional vestiges of 5 whitish lobes of the calyx, the tube of which girts the base of the fruit, and of as many stamens alternate with these and nearly equalling them in length. Petals apparently wanting. Fructiferous pedicels solitary or geminate, 3 lines long. *Drupe oblong*, fully 3 lines in length, with a thin, dry pulp, and a bony, one-celled putamen.

This is without doubt a congener of *Condalia microphylla*, with which it accords in habit. But its leaves are much thicker, and conspicuously lineate underneath with parallel and approximate nerve-like veins; and the fruit is of a different shape.

4. COLLETIA, *Commers.*

1. COLLETIA SPINOSA, *Lam.*

HAB. Chili. Lagunas and Valparaiso: a form with short and excessively branched spines (but with the filaments exserted). Near Santiago: a form with stout and simple spines, and the whole surface softly puberulent.

2. COLLETIA ULICINA, *Gill. & Hook.*

Colletia ulicina, Gill. & Hook. Bot. Misc. 1, p. 155, t. 44; Gay, Fl. Chil. 2, p. 33.

HAB. Near Valparaiso. (Destitute of flowers and fruit.) Perhaps the specimen belongs to a slender form of *C. spinosa*.

5. RETANILLA, *Brongn.*

1. RETANILLA EPHEDRA, *Brongn.*

HAB. Chili; in the vicinity of Valparaiso.

2. RETANILLA TRINERVIA, *Hook. & Arn.*

Retanilla trinervia, Hook. & Arn. Bot. Misc. 3, p. 174.
Trevoa trinervia, Gill. & Hook. Bot. Misc. 1, p. 159; Gay, Fl. Chil. 2, p. 24.

HAB. Chili, near Valparaiso. (In flower.)

6. COLUBRINA, *Richard.*

1. Colubrina Asiatica, *Brongn.*

Colubrina Asiatica, Brongn. Rhamn. in Ann. Sci. Nat. 10, p. 368; Guillem. Zeph. Tait. p. 68.
Ceanothus Asiaticus, Linn.; Cav. Ic. 5, t. 440; DC. Prodr. 2, p. 30.
C. capsularis, Forst. Prodr. Fl. Ins. Austr. p. 18.

Hab. Tahiti, Matia, and Eimeo, Society Islands: abundant in deep woods near the coast. Manua, Samoan Islands. Feejee Islands; common. Sooloo Islands.

At Sandalwood Bay, Feejee Islands, a variety was collected with smaller and narrower leaves; otherwise apparently not different from the ordinary form of the species.

7. ALPHITONIA, *Reissek.*

Calyx planiusculus, tubo subturbinato, limbo 5-partito, lobis intus apicem versus cristato-appendiculatis. Petala 5, unguiculata, convoluta, disci carnosi 10*-crenulati plani calycis tubum replentis et ovario adhærentis, margini inserta. Stamina cum petalis inserta, iisdem æquilonga: filamenta filiformia: antheræ biloculares, loculis longitudinaliter dehiscentibus basi acuminatis. Ovarium disco tectum, cum tubo calycis connatum, biloculare, raro triloculare: styli* 2, *raro* 3, *breves. Drupa globosa, baccata, calycis circumscissi cupula adnata basi involuta; sarcocarpio serius pl. m. exsucco et rupto; pyrenis* 2 (*raro* 3) *cocciformibus crustaceis intus dehiscentibus, demum subbivalvibus atque secedentibus, semina sæpius relinquentibus in arillo? membranaceo inclusa. Semina obovata, plano-convexiuscula, testa cornea nitida. Embryo rectus, albumine carnoso seu granuloso subæquilongus; cotyledonibus ovalibus foliaceis planis.—Arbores Oceanicæ et Australasicæ; foliis coriaceis paralelle penninerviis subtus dealbatis, stipulis minutis caducis; floribus terminalibus axillaribusque cymosis.*

Alphitonia, Reissek, in Endl. Gen. Pl. p. 1098, no. 5729.

A genus (the floral characters of which have not before been indicated), with nearly the foliage and venation of *Frangula*, and the flowers of *Colubrina;* distinguished by the very strongly salient crest of the inner face of the sepals, by the anther-cells pointed at their base, and by the membrane that encloses the seeds. I doubt if this membrane is truly an arillus; but our materials are not sufficient for the complete investigation of its nature. Although marked with what seems like a rhaphe, it cannot be the testa or any proper integument of the seed, as Fenzl (in Pl. Hugel.) took it to be, for it has no connexion with the corneous seed-coat at the chalaza, but only at the hilum. The chalazal end appears to be slightly open, as would be the case with an arillus. The cocci of the Australian species (*A. excelsa*), the flowers of which are still unknown, often fall away after dehiscence, just as in *A. zizyphoides*, so as to leave the seeds attached to the persistent cupulate base, and enclosed in their fragile arillus? Perhaps this membrane is a separable lining of the coccus.

1. ALPHITONIA ZIZYPHOIDES. (Tab. 22.)

A. foliis oblongo-lanceolatis seu ovato-lanceolatis acuminatis glabratis supra nitidis subtus albidis venulisque inter venas primarias rectiusculas eximie reticulatis.

Rhamnus zizyphoides, Soland. in Forst. Prodr. Ins. Austr. p. 90 (absq. char.); Spreng. Syst. 1, p. 768; DC. Prodr. 2, p. 27.
R. incana, Roxb.; Spreng. Syst. Veg. Cur. Post. p. 86? fide spec. Hort. Calcutt.
Pomaderris zizyphoides, Hook. & Arn. Bot. Beech. Voy. p. 61.

HAB. Tongatabu. Samoan or Navigators' Islands. Ovolau, Feejee Islands. (Tahiti, Barclay, &c.)

"Tree 20 to 30 feet high, the trunk often a foot in diameter." Young branchlets, petioles, the midrib of the leaves, and the inflorescence clothed with a minute, more or less deciduous, ferrugineous tomentum. *Leaves oblong-lanceolate or ovate-lanceolate, acuminate,* usually with a gradually tapering point, from 3 to 6 inches long, entire, or obsoletely repand-serrulate, thin but coriaceous in texture, soon *glabrate* both sides, the upper very smooth and shining, the lower *whitish* or minutely canescent, with the *straightish primary veins*

(12 to 14 pairs) rather prominent and ferrugineous, and the intermediate *veinlets closely and conspicuously reticulated*. Petioles an inch long. *Stipules minute*, subulate, *caducous*. *Cymes axillary and terminal*, much shorter than the leaves, many-flowered, the branches somewhat unilateral. Pedicels about the length of the calyx. Bracts minute. *Calyx nearly flat* when expanded, 2 to 3 lines in diameter, with a very short and *somewhat turbinate tube*, clothed with a whitish or ferrugineous tomentum externally; the *limb five-parted; lobes triangular-ovate*, three-nerved by transmitted light, valvate in æstivation, plane, except near the *apex inside*, which is abruptly *appendiculate with a salient fleshy crest*. *Disk flat, fleshy, filling the throat of the calyx, and adherent to the surface of the ovary*, which it covers, its border obscurely 10-crenulate; its centre a little hairy at the point of junction with the styles. *Petals* 5, *unguiculate, convolute* and cucullate, obovate, or at length spatulate, entire, or barely retuse, greenish or white, nearly equalling the lobes of the calyx in length, inserted on the margin of the disk. *Stamens* 5, *inserted with the petals* and enclosed by them, nearly equalling them in length: *filaments filiform: anthers two-celled*, didymous; the *cells opening longitudinally, parallel*, conspicuously *pointed at their base*, in a manner not observed in any other genus of the order. *Ovary two-celled, rarely three-celled, coherent with the calyx-tube: styles short*, distinct or nearly so: stigmas simple. Ovules solitary, erect, anatropous; the rhaphe ventral. Fruit a *globose, baccate drupe*, 4 or 5 lines in diameter, *girt at the base with the persistent, circumscissile tube of the calyx*, which forms a kind of cupule. *Nucules* 2, or sometimes 3, in a thin pulp, crustaceous, plano-convex, *dehiscent* down the ventral suture after the drying of the pulp, and partly down the dorsal suture also, thus *imperfectly two-valved*, often falling away so as to leave the seeds borne on the persistent cupulate base, enclosed in its loose, chestnut-brown, shining, chartaceo-membranaceous, fragile *arillus*, if such it be: this is fissile down the inner side, and is adherent to the seed only at the hilum. The seed is plano-convex, with no evident rhaphe; the smooth testa crustaceous or bony. *Embryo straight*, nearly the length of the thin and fleshy albumen. *Cotyledons oval, foliaceous, flat*. Radicle short, inferior, not perceptibly incurved.

PLATE 22, *A*.—ALPHITONIA ZIZYPHOIDES: summit of a flowering branch. Fig. 1. A flower, enlarged. 2. Vertical section of the same.

3. A stamen, seen from within, more magnified. 4. Branchlet, with fruit, of the natural size: one of the cupules, from which the cocci have fallen away, showing a seed, enclosed in its arillus, still attached. 5. Fruit, with one of the cocci entire, and covered with the remains of the pulp; the other fallen, leaving the seed in its arillus, magnified. 6. One of the dehiscent cocci, equally magnified. 7. Seed, enclosed in its arillus, more magnified. 8. Same, with the arillus split down anteriorly. 9. Vertical section of the seed and embryo, magnified.

2. ALPHITONIA FRANGULOIDES, Sp. Nov. (Tab. 22.)

A. foliis ovato-oblongis seu oblongo-lanceolatis cuspidato-acuminatis supra nitidis subtus primum rufo-tomentulosis deinde glabratis albescentibus inter venas primarias crebras rectas reticulatis; alabastris albo-tomentosis.

Var.? β. OBTUSA: *foliis ellipticis apiculatis vel mucronulatis nunc retusis subtus albidioribus.*

HAB. Sandalwood Bay, &c., Vanua-levu, Feejee Islands. Var.? β. Tongatabu: in fruit only.

The Feejee plant is said to be a shrub, for the most part. Although nearly allied to the preceding species, it appears to differ specifically in its smaller leaves (varying from one and a half to 3 inches in length, either *ovate-oblong* or *ovate-lanceolate*), which taper to an acute point, are *tipped with a slender mucronate cusp*, and when young are clothed with a *rusty-red tomentum underneath:* when this disappears a *whitish* but almost *glabrous* surface is left: while the upper surface is very smooth and shining. The primary veins are *closer* and *straighter* than in *A. zizyphoides;* the fine reticulation of the lower surface is similar. The small and many-flowered cymes are terminal, or from the uppermost axils. The *flower-buds* are *white-tomentose*, while their pedicels are ferrugineous. The flowers, although rather smaller, accord in structure with those of *A. zizyphoides*, except that the crest of the inside of the sepals is still more salient. The drupe, seeds, &c., are similar in structure, but rather smaller.—The specimens from Tongatabu (in fruit only) here doubtfully appended to this species, are remarkable for their *elliptical and obtuse* leaves, with their apex barely *apiculate or mucronate*, but sometimes even retuse: the lower surface is not so rufous when young, and is *whiter* when old: the drupes are just as in the Feejee plant. The plant may prove to be a distinct species; but it is more likely to pass into *A. franguloides.*

PLATE 22, *B.*—ALPHITONIA FRANGULOIDES: a flowering branch, of the natural size. Fig. 1. A flower-bud. 2. An expanded flower. 3. A lobe of the calyx, seen from within. 4. A petal, seen from the outside. 5. A petal and stamen, seen from within. 6. Lateral view of a petal and stamen. 7. Vertical section of the ovary, &c. 8. Transverse section of the ovary. The details, magnified.

8. POMADERRIS, *Labill.*

1. POMADERRIS ERICÆFOLIA, *Hook.*

Pomaderris ericæfolia, Hook. Jour. Bot. 1, p. 257; Hook. Fl. N. Zeal. p. 46.

HAB. Bay of Islands, New Zealand.

2. POMADERRIS LANIGERA, *Sims.*

Pomaderris lanigera, Sims, Bot. Mag. t. 1823; DC. Prodr. 2, p. 33.

HAB. Near Sydney, New South Wales.

3. POMADERRIS MULTIFLORA, *Sieb.*

Pomaderris multiflora & P. discolor, Sieb. Pl. Exsic. N. Holl. ex Fenzl, Pl. Hugel. p. 21.
P. malifolia, Sieb. ex Steud. Nomen. Bot. 2, p. 379.
P. discolor, DC. Prodr. 2, p. 33, excl. syn.

HAB. Near Sydney, New South Wales. (Foliage only.)

9. GOUANIA, *Jacq.*

1. Gouania Richii, Sp. Nov.

G. ramulis puberulis glabratis; foliis glabris subcordato-oblongis acuminatis subdenticulatis; racemis elongatis; coccis orbiculatis utrinque emarginatis leviter alatis extus disco pilosulis.

Hab. Vanua-levu, one of the Feejee Islands.

The specimen, which is in fruit only, I cannot identify with any described species. The branch is glabrous or *glabrate* below; above, like the short fructiferous *branchlets, minutely pubescent.* Petioles 3 to 5 lines long, puberulent. *Leaves glabrous,* except some minute hairs on the veins of the lower surface, 1½ to 2½ inches in length, chartaceous in texture, of the same hue both sides, *subcordate-oblong, acuminate,* the acumination *denticulate* with a few minute and glandular teeth, one or two of which also occasionally occur near the base, otherwise entire; the veins pinnate and nearly simple, except the basal pair, which are larger and branched. Stipules obsolete. *Racemes elongated,* spicate, terminating short axillary branches and panicled at the summit of the stem; the rhachis pubescent. Flowers not seen. Fruit mostly dicarpellary, flat, very short-pedicelled: the *carpels orbicular,* 3 or 4 lines in diameter, rather broader than long, *emarginate* at both ends, *moderately winged,* the wing thickish; the body minutely *hairy* externally with a ferrugineous pubescence. There are no tendrils on the specimen.

2. Gouania denticulata, *Smith.*

Gouania denticulata, Smith, in Rees, Cycl.; DC. Prodr. 2, p. 39.

Hab. Ovolau, Feejee Islands.

An imperfect flowering specimen, which accords pretty well with the character of *G. denticulata*; so that it may be provisionally referred to that species. It is probably the same as No. 1578 of Cuming's Philippine collection.

3. GOUANIA VITIFOLIA, Sp. Nov.

G. foliis membranaceis ovatis rotundisve cordatis subacuminatis creberrime crenato-dentatis ramulisque glabratis; stipulis ovatis parvis; spicis brevibus calycibusque rufo-tomentosis; coccis orbiculatis alatis utrinque emarginatis.

HAB. Sandwich Islands: on dry hills, in the district of Waianai, Oahu.

Branches shrubby, scandent by involute tendrils, glabrous. Branchlets, petioles, &c., minutely ferrugineous-pubescent, at least when young. *Leaves membranaceous*, one and a half to 2 inches, or more in length, one to 2 inches wide, *ovate or roundish, cordate*, with a narrow sinus, *somewhat acuminate*, except the earlier ones, which are very obtuse, *closely crenate-toothed*, the obtuse teeth furnished with glandular tips, glabrous above, softly and minutely pubescent, but soon *glabrate* underneath, triple-nerved from the base, and with straight and approximate primary veins. Petioles 3 to 6 lines long. *Stipules ovate*, acute, a line long. *Spikes short*, or at length equalling the leaves, axillary and terminal, dense, especially the upper part, which bears the sterile flowers; the rhachis, calyxes, and minute oval bracts clothed with a dense and fine ferrugineous or *reddish tomentum*. Lobes of the disk emarginate. Fruits very short-pedicelled, mostly tricarpellary, when young ferrugineous-pubescent, obovoid, and entirely wingless; but the mature *carpels moderately winged, orbicular in outline, slightly emarginate at both ends*, glabrate, about 5 lines in diameter.

This species considerably resembles *G. tiliæfolia*, especially in its inflorescence; but the stems are glabrous, the leaves (which resemble those of a *Vitis* or a *Tilia* on a small scale) are closely beset with even and rather coarse teeth; the stipules are shorter and broader; and the mature carpels are winged.

4. GOUANIA? ORBICULARIS, *Walp.*

G. ramis erectis ecirrhosis; ramulis petiolisque sericeo-pubescentibus; foliis orbiculatis integerrimis coriaceis glabratis penninerviis; cymulis axillaribus confertis petiolum haud superantibus; fructibus bi–trialatis.

Gouania integrifolia, Meyen, Reise, 2, p. 156, non Lam.
G. (sphalmate *Gossania*) *orbicularis*, Walp. Rel. Meyen. p. 323.

HAB. Sandwich Islands: in dry and rocky situations, near Waianai, Oahu.

An *upright*, shrubby plant, *destitute of tendrils;* the older parts glabrate; the young *branchlets, petioles, &c., silky-pubescent.* Stipules subulate, caducous. *Leaves* crowded towards the summit of the branches, alternate, *orbicular* or nearly so, sometimes retuse, *entire, pinnately-veined* even from the base, very pale both sides, *nearly glabrous* or glabrate, except a minute pubescence on the veins, *coriaceous,* but rather thin, about an inch in diameter; the slender petiole almost of the same length. Flowers monœcio-polygamous, axillary, in short-peduncled and *crowded small cymes, not exceeding the petiole.* Bracts subulate, opposite or verticillate, silky-pubescent, as is the whole inflorescence. Pedicels one or two lines long. Flower-buds ovate, acuminate, minutely silky-pubescent; the edges of the thin, triangular-ovate and acuminate, plane calyx-lobes scarcely reduplicate in æstivation. Petals spatulate, convolute, thin and delicate, shorter than the calyx-lobes, as long as the stamens. Anthers two-celled. Disk as in *Gouania*, except that it is scarcely at all lobed or angled. Styles in the fertile flowers 2 or 3, distinct nearly to the base. Immature *fruit* narrowly *two–three-winged*, glabrous; the 2 or 3 cells each containing a flat seed.

This can scarcely be a true *Gouania*, having such a different habit and inflorescence (the flowers are not glomerate-spicate, as described by Walpers, but cymulose); still it cannot be separated from the genus until the ripe fruit is known.

10. REISSEKIA, *Endl.*

1. Reissekia cordifolia.

Gouania cordifolia, Raddi, Mem. Pl. Brasil. add. p. 16; DC. Prodr. 2, p. 39.
G. smilacina, Smith, in Rees, Cycl.; DC. l. c.

Hab. Brazil, in the vicinity of Rio Janeiro; where it is very common.

11. WALPERSIA, *Reisseck, in Endl.*

1. Walpersia stipularis, *Reisseck, l. c.*

Phylica stipularis, Linn. Mant. p. 208; Wendl. Coll. t. 32; DC. Prodr. 2, p. 35.

Hab. Cape of Good Hope, in the vicinity of Cape Town.

2. Walpersia capitata, *Presl.*

Trichocephalus spicatus, Eckl. & Zeyh. Enum. Pl. Afr. Austr. p. 130.

Hab. With the foregoing.

12. PHYLICA, *Linn.*

1. Phylica bicolor, *Linn.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

ORD. HIPPOCRATEACEÆ.

1. HIPPOCRATEA, *Linn.*

1. HIPPOCRATEA MICRANTHA, *Camb.?*

Hippocratea micrantha, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 103?

HAB. Organ Mountains, near Rio Janeiro, Brazil.

2. ANTHODÒN, *Ruiz & Pav.*

1. ANTHODON UNDULATUM, *Mart.*

Anthodon undulatum, Mart. in Schult. Mant. Syst. 1, p. 253; DC. Prodr. 1, p. 569.
Salacia undulata, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 107.
Tontelea undulata, Endl. in Walp. Repert. 1, p. 400.

HAB. Rio Janeiro, Brazil.

3. SALACIA, *Linn.*

1. SALACIA MACROPHYLLA, *Blume.*

Salacia macrophylla, Blume, Bijdr. p. 221, ex pl. Zolling. no. 524, *a.*

HAB. Near Caldera, Mindanao, Philippine Islands.

The specimen, like that with which it has been compared in Zollinger's collection, is destitute both of flowers and fruit. But a loose capsule which occurs in the same sheet would appear to belong to a Celastraceous plant.

ORD. CELASTRACEÆ.

1. PUTTERLICKIA, *Endl.*

1. PUTTERLICKIA PYRACANTHA, *Endl.*

Putterlickia pyracantha, Endl. (Gen. Pl. p. 1086) in Walp. Repert. 1, p. 528.
Celastrus pyracanthus, Linn.; DC. Prodr. 2, p. 8; Eckl. & Zeyh. Enum. Pl. Afr. Austr. p. 119.

HAB. Cape of Good Hope, in the vicinity of Cape Town.

2. CATHA, *Försk.*, *Webb.*

1. CATHA VITIENSIS, Sp. Nov. (Tab. 23.)

C. inermis; foliis ovalibus crenulatis basi in petiolum brevem attenuatis; cymis brevibus multifloris; calycis lobis fimbriato-ciliatis; petalis denticulatis; capillis inter stamina nullis; stylis in fl. fert. 3 *inferne connatis; capsula subglobosa; seminibus ovalibus basi arillo carunculæformi glabro stipatis.*

HAB. Ovolau, Feejee Islands.

A shrub, apparently of considerable size, with slender and diverging grayish branches, *unarmed*, glabrous throughout. *Leaves oval, crenulate*, or crenate-serrate with small teeth, obtuse or obtusely somewhat acuminate, *contracted at the base into a short petiole* (of 3 or 4 lines in length), chartaceous in texture, dull, veiny, from 2 to 3½ inches long: they are scattered on vigorous shoots, and more or less fascicled on short spurs. *Cymes many-flowered*, axillary or sometimes terminal, loose, much shorter than the leaves, either nearly sessile, or on a common peduncle which does not exceed the petiole. Pedicels capillary, 3 to 5 lines long. Flowers polygamous; the expanded corolla 3 lines in diameter. Calyx minute, deeply five-cleft; the lobes greenish-white, obtuse and roundish, *ciliate-fringed* with bristly hairs. *Petals* obovate or spatulate-oblong, very *minutely denticulate*, spreading, sessile by a thickish base, white, tardily deciduous. Stamens 5; in the sterile flowers with the subulate filaments as long as the petals, their cordate anthers obtuse (or sometimes mucronate): in the fertile flowers much shorter, and with smaller and often imperfect anthers. There are no "*capilli* between the stamens, in pairs before the petals," as is said by Forster to be the case in his *Celastrus crenatus*. Disk fleshy, orbicular, almost entire, perigynous, in the early state covering the ovary and adherent to it. Ovary in the sterile flowers effete, but usually three-celled and ovuliferous, tipped with a short style and a three-lobed stigma; in the fertile flowers ovoid, three-celled, and with 3 *slender styles* which are *more or less united below the middle*, their diverging summits stigmatose on their inner face. Ovules 2 in each cell, erect from the base, anatropous, sessile, without any trace of a cupule or arillus. Fruit a *nearly globose capsule*, 3 lines in diameter, not lobed nor triquetrous, three-celled, three-valved, three-seeded: the valves coriaceous, bearing the dissepiment on the middle; to the base of which the seed is attached. *Seed oval* or oblong, its base cupulate with a short and irregular, *caruncle-like, fleshy arillus*, which is entirely glabrous: testa coriaceous, with a thin external pellicle. Embryo nearly the length of the fleshy albumen: cotyledons oval, flat: radicle short, inferior.

This species is obviously related to *Catha crenata*, the *Celastrus crenatus* of Forster, from the Marquesas (and Society?) Islands, with the description of which, reproduced by Guillemin (Zeph. Tait. p. 69) from Forster's manuscript, I have endeavoured to contrast it. Our plant has smaller and less coriaceous leaves, smaller pods, and a reddish and glabrous (not woolly and white) cup-shaped arillus to the oblong seed; the flowers are very much smaller than those of *Prunus*

Padus, and are destitute, as already remarked, of the ten capillary bodies mentioned by Forster as interposed in pairs between the stamens.—That an erroneous character has been ascribed to the arillus of *Catha* by Endlicher has already been noticed by Webb, who, in his elaborate Phytographia Canariensis, has well illustrated *Catha cassinoides*.

PLATE 23.—CATHA VITIENSIS: in flower and fruit. Fig. 1. A sterile? flower. 2. Vertical section of the same. 3. A petal. 4. A stamen. 5. Vertical section of a fertile flower. 6. Transverse section of the ovary. 7. A dehiscent capsule. 8. A seed, with its arillus. 9. Transverse section of the seed. 10. Vertical section of the seed and its short arillus.—All the details magnified.

3. CELASTRUS, *Linn.*

1. CELASTRUS RICHII, Sp. Nov.

C. inermis, glaberrima; foliis oblongis utrinque subacutis crenulatis supra lucidis brevissime petiolatis; racemo terminali paucifloro.

HAB. Vanua-levu, Feejee Islands.

The specimens are in fruit only: but the *terminal raceme* and the complete arillus, as well as the habit, show the plant to be a genuine *Celastrus*. It bears much resemblance to the East Indian *C. paniculatus*; but the *few-flowered* racemes, the branchlets, &c., are *perfectly glabrous*, and the leaves are *oblong* or elliptical, *more or less acute at both ends*, or only slightly acuminate, *shining above*, rather indistinctly *crenate*, and *on very short petioles* (one or two lines in length). The stems would appear to be sarmentose; the slender branchlets are thickly warty-dotted; the leaves of a chartaceous texture, 2 or 3 inches long. Capsule globose, obscurely three-lobed, 5 lines in diameter, three-celled, three-valved, stipate at the base by the persistent calyx (the lobes of which apparently are not ciliate); the cells two-seeded. Arillus thin and fleshy in the dried plant, enclosing the seed, apparently orange-coloured; the seed purple.

4. MAYTENUS, *Feuill.*

1. Maytenus obtusifolius, *Mart.*

Maytenus obtusifolius, Mart. Herb. Bras. & in Flora, 24 (1842), p. 88.

Hab. Brazil, near Rio Janeiro. (In fruit.)

2. Maytenus Brasiliensis, *Mart. l. c.*

Hab. Brazil; with the preceding.

3. Maytenus Magellanicus, *Hook. f.*

Maytenus Magellanicus, Hook. f. Fl. Antarc. p. 254.
Cassine Magellanica, Lam. Ill. n. 2590, & Dict. Suppl. 2, p. 130.
Celastrus Magellanicus, DC. Prodr. 2, p. 8; Hook. Ic. Pl. t. 537.

Hab. Orange Harbour, Tierra del Fuego; in woods, rather rare.

4. Maytenus Chilensis, *DC.*

Maytenus Chilensis, DC. Prodr. 2, p. 9; Gay, Fl. Chil. 2, p. 7.
Maiten, Feuill, Obs. 3, p. 39, t. 27.

Hab. Chili; abundant near Valparaiso.

5. PERROTTETIA, *H. B. K.*

Char. emend. et auctus. *Flores diœcio-polygami. Calyx quinquefidus vel quinquepartitus, persistens; lobis subovatis æstivatione imbricatis, Petala 5, sub margine disci perigyni integerrimi orbicularis inserta,* *ovata, acuta, æstivatione valvata? seu* (*in* P. Sandwicensi) *imbricata, persistentia. Stamina* 5, *cum petalis inserta, iisdem alterna et breviora, vel in fl. masc. duplo longiora: antheræ didymæ, incumbentes, biloculares, muticæ, loculis longitudinaliter dehiscentibus. Ovarium liberum* (*fl. masc. sterile*), *biloculare, loculis biovulatis: stylus brevis vel nullus: stigma bifidum. Ovula collateralia, e basi loculi erecta, anatropa* (*rhaphe in* P. Sandwicensi *fere dorsali!*). *Bacca parva, depresso-globosa, bilocularis, 2–4-sperma. Semina exarillata, obovoidea, testa crustacea multicostata.* (*Embryo ignotus.*)—*Frutices inermes, glabelli; foliis alternis oblongis glanduloso-serratis vel denticulatis; stipulis deciduis; paniculis axillaribus thyrsoideis parvifloris.*

PERROTTETIA, H. B. K. Nov. Gen. & Spec. 7, p. 73, t. 622; Endl. Gen. p. 1089.

1. PERROTTETIA SANDWICENSIS, Sp. Nov. (Tab. 24.)

P. foliis ovato-oblongis glanduloso-serratis; stipulis minutis caducis; paniculis compositis; floribus pedicellatis viridulis; petalis triangulari-ovatis lanuloso-ciliatis calycem vix superantibus; testa seminum costis transversis exsculpta.

HAB. Sandwich Islands: on mountains behind Honolulu, Oahu (where it was also gathered by Gaudichaud): also Hawaii; along the margin of forests.

A *shrub*, or small tree, *nearly glabrous;* the younger branchlets and the lower surface of the nascent leaves more or less pubescent. *Leaves alternate, ovate-oblong,* abruptly somewhat acuminate, either obtuse or acute at the base, *serrate* with small and *glandular-tipped* teeth, rather chartaceous in texture, deciduous, pinnately-veined, somewhat shining above, paler beneath, 2½ to 3½ inches long; the petiole from half an inch to an inch in length. *Stipules minute, caducous. Flowers small* (a line or a line and a half in diameter, when expanded), *polygamo-diœcious, greenish, pedicellate,* very numerous, in compound *thyrsoid panicles from the axils* of the leaves, especially of those near the base of the branches of the season: the panicles are mostly shorter than the leaves; the puberulent common peduncle usually shorter than the petiole; its branches divaricate: pedicels crowded or slightly fascicled, a line or a line and a half long, subtended by a minute bract, articulated in the middle. *Calyx five-parted, persistent, externally slightly puberulent;* the lobes ovate-lanceolate, thickish, rather acute, *imbricated in æstivation. Petals* 5, *triangular-ovate, acute,* greenish-white, sessile by a broad base, *inserted under the entire margin of the orbicular,* flat, or somewhat concave, *perigynous disk,* which fills the bottom of the calyx and surrounds the base of the ovary; they are decidedly *imbricated in æstivation, scarcely exceeding the calyx,* plane, obscurely one-nerved, their thin margins *ciliate, persistent. Stamens* 5, inserted on the margin of the disk, *alternate* with the petals: filaments in the male flowers filiform and twice the length of the petals; in the female flowers very short (about half the length of the petals), persistent: *anthers didymous, incumbent,* fixed near the middle, destitute of a manifest connective, *two-celled, pointless;* the ovoid *cells opening longitudinally;* those of the fertile flowers smaller and scarcely polliniferous. *Ovary free,* ovoid, *in the male flowers abortive and sterile;* in the fertile flowers *two-celled; the style very short* and thick, terminated by a spreading *two-lobed stigma. Ovules* 2 *in each cell, collateral,* obovoid-globose, *anatropous, erect from the base of the cell,* where they are inserted on a placental projection from the axis, so that their opposite and very thick *rhaphes* become *nearly dorsal,* as respects the axis of the ovary. The fruit, not perfectly mature, appears to be a rather dry *berry, depressed-globose,* slightly 2–4-lobed, according to the number of seeds perfected; in the specimens scarcely exceeding a line in diameter, stipate at the base by the persistent calyx, corolla, &c., *two-celled; the cells two-seeded,* or by abortion *one-seeded. Seeds obovoid,* oblique, large for the size of the fruit, with a short and caruncle-like rhaphe, which is exterior or *dorsal:* the thick and *crustaceous testa sculptured with numerous transverse ribs and grooves. Arillus none.* The testa, although plump and well-formed, is empty in all the numerous seeds examined: so that the characters of the albumen, if there be any, and of the embryo, are unknown.

The general characters of this plant so nearly accord with those of *Perrottetia Quinduensis* that I refer it, without much hesitation, to that little-known genus. Since it is obvious from Kunth's figures, that what he doubtfully terms *pyrenæ* or *ossicula* are seeds, there remains no important generic difference between that plant and our own, except the æstivation of the petals; which in the latter are quincuncially imbricated, while, according to Kunth, they are valvate in *P. Quinduensis.* This would seem to be the case in two flowers which have been obligingly furnished me by M. Tulasne, taken from an original specimen in the Paris Museum; but they are much too old to decide this point. Even if this be so, it would not be proper to establish a new genus for the Hawaiian plant, unless the flowers of the Peruvian species should prove to be truly hermaphrodite (which I doubt), and the rhaphe normally ventral. As species, they are abundantly distinguished by the subsessile flowers, the conspicuous stipules, and the larger petals of *P. Quinduensis*, which are not at all ciliate, and by the longitudinal sculpturing of its bony seeds.* These, in the specimens of Humboldt and Bonpland (the only ones known), are hollow and destitute of embryo, just as are those of our Hawaiian plant; probably from not having been fertilized by the pollen of male flowers. The internal structure of the seed is therefore a desideratum; and until this is known, the affinities of the genus cannot be positively determined. Most probably, however, it belongs to the *Celastraceæ*, notwithstanding the total absence of any arillus.

According to a note on the ticket of Gaudichaud's specimen, this shrub is called *Oraye* or *Olaye* by the Hawaiians.

PLATE 24.—PERROTTETIA SANDWICENSIS. Fig. 1. A branch of the fertile plant, in flower and fruit, of the natural size. 2. Flowering branch of the male plant. 3. A small portion of the inflorescence of the fertile plant, enlarged. 4. Diagram of the flower. 5. A sterile flower. 6. A fertile flower, expanded. 7. A pistil, from the latter. 8. Vertical section of a flower through the pistil and disk. 9. Transverse section of the base of the ovary, showing the position of the ovules. 10. An ovule. 11. A fruit. 12. Vertical section of the same. 13. A seed.—All the details magnified.

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* M. Tulasne informs me that, if he is not mistaken, the ovary of *P. Quinduensis* is sometimes four-celled, with a single ovule in each cell.

ORD. AQUIFOLIACEÆ.

1. CASSINE, *Linn.*

1. CASSINE MAUROCENIA, *Linn.*

Cassine Maurocenia, Linn. Spec. Pl. p. 385 (Dill. Hort. Elth. t. 121); Hook. Ic. Pl. t. 552.

HAB. Cape of Good Hope, near Cape Town. (Without flowers or fruit.)

2. ILEX, *Linn.*

1. ILEX CANARIENSIS, *Poir.*

Ilex Canariensis, Poir. Dict. Suppl. 3, p. 67; DC. Prodr. 2, p. 14; Webb. Phytogr. Canar. 2, p. 137, t. 69.

HAB. Madeira.

2. ILEX PARAGUAYENSIS, *Lamb.*

Ilex Paraguayensis, Lamb, Pin. t. 2; Spreng. Syst. Cur. Post. p. 48; Hook. Lond. Jour. Bot. 1, p. 35, t. 1, 3.
I. Paraguariensis, St. Hil. in Mem. Mus. 8, p. 351, & Voy. Brés. 1, p. 273; DC. Prodr. 2, p. 15.
I. Maté, St. Hil. Hist. Pl. Remar. Brés. & Parag. 1, p. 41.

HAB. Organ Mountains, Brazil; where it was also collected by the late Dr. Gardner.

The specimens (with young fruit) accord with the var. β. of Sir William Hooker's article, above-cited, to which the reader is referred for a full account of this plant, the celebrated *Paraguay Tea*. It is used in Paraguay, &c., in much the same manner as was the *Yapon* (a related species of *Ilex*) by the aborigines of North Carolina.

3. Ilex Vitiensis, Sp. Nov. (Tab. 25.)

I. foliis ovalibus subacuminatis integerrimis tenuiter coriaceis; floribus abortu dioicis in cymulas breviter pedunculatas dispositis, masculis 4–6-*meris, fœmineis sæpissime* 8-*meris; pyrenis* 8 *dorso profunde sulcatis.*

Hab. Sandalwood Bay, Vanua-levu, Feejee Islands.

A shrub with ash-gray bark, glabrous throughout, except a very slight pubescence on the pedicels and calyx. *Leaves oval*, one and a half to 2 inches long, abruptly and obtusely *somewhat acuminate, entire, thin, but coriaceous* in texture, mostly rounded at the base, dull, rather obscurely veined; the petioles 3 or 4 lines long. Peduncles axillary, 3 or 4 lines in length, bearing a small cyme, very much shorter than the leaves; in the sterile plant more or less compound and with numerous flowers; in the fertile simple and mostly few-flowered. *Flowers diœcious by abortion*, barely a line in length; the *male flowers* 4–6-*merous*, more commonly hexamerous, with a rather deeply cleft calyx, and an abortive pistil; the petals united only at the base, longer than the stamens. Corolla and stamens of the female flowers not seen; the persistent calyx obscurely eight-toothed, at least in most cases. Drupe (immature) a line long, obtusely apiculate; the 8 *nucules deeply excavated on the back.*

This plant, which is probably related to Blume's *Ilex cymosa*, would be a *Prinos*, except that the nucules of the drupe are deeply grooved on the back. The number of parts in the flower is far too variable for a generic character, when not accompanied by other distinctions. I believe, therefore, that the genus *Prinos* must be merged in *Ilex*.

Plate 25, *A*.—Ilex Vitiensis; with immature fruit. Fig. 1. Bud of a sterile flower. 2. Corolla of the same, laid open, and stamens.

3. Anterior view of a stamen. 4. The calyx and abortive pistil. 5. Immature drupe. 6. Same, with the upper part of the sarcocarp removed. 7. Transverse section of a drupe.—The details magnified.

3. BYRONIA, *Endl.*

Flores polygami. Calyx 3–4-*lobus, lobis sæpius irregulariter crenulatis. Corolla* 5–9-*partita. Stamina imæ corollæ inserta, ejusdem lobis numero æqualia rariusve dupla; antheris fl. fert. plus minusve effœtis. Ovarium* 12–18-*loculare, fl. ster. imperfectum, stigmate sessili late discoideo radiato centro umbilicato coronatum. Ovula in loculis solitaria, ex apice pendula; rhaphe dorsali. Drupa baccata,* 12–18-*pyrena; pyrenis fibroso-cartilagineis. Embryo in apice albuminis carnosi minimus.—Arbusculæ Sandwicenses et Taitenses, foliis coriaceis lucidis, floribus axillaribus cymosis.*

A genus, now strengthened by a second species, differing from *Ilex* (including *Prinos*) in the petals being more numerous than the lobes of the calyx, and the cells of the ovary of double their number. The number of the stamens, also, is sometimes doubled in the sterile flowers.

1. BYRONIA SANDWICENSIS, *Endl.* (Tab. 26.)

B. foliis ovalibus *seu elliptícis; ovarii loculis pyrenisque fructus* 12–18.

Byronia Sandwicensis, Endl. in Ann. Wien. Mus. 1, p. 184, & Gen. p. 1093.
Ilex? anomala, Hook. & Arn. Bot. Beech. Voy. p. 111, t. 25.

HAB. Sandwich Islands. Kaala Mountains, Oahu. Forests on Mouna Kea, and near the crater of Lua Pele, &c., Hawaii. (Also, gathered by Macræ, Lay & Collie, &c.)

A small tree, or sometimes a shrub, glabrous throughout. *Leaves coriaceous, shining* above, alternate, *oval or elliptical*, mostly obtuse or rounded at both ends, 2½ to 3½ inches long, sometimes 2 inches wide, reticulate-veiny, entire, or occasionally serrulate on vigorous shoots; the petioles from half an inch to an inch long. *Flowers polygamous,* numerous, in trichotomous *axillary cymes:* the peduncle an inch or more in length, apparently two-edged; its branches divaricate, subtended by a pair of small oblong bracts: pedicels 2 or 3 lines long. *Calyx* small, persistent, usually *four-lobed*, sometimes *three-lobed* according to Hooker and Arnott; the lobes broad and rounded, imbricated in æstivation, *crenulately 3–4-toothed* in the fertile flowers, entire or nearly so in the sterile, of a thick and firm texture. *Corolla* hypogynous, *6–9-parted*, more commonly eight-parted, rotate-spreading, deciduous; the lobes rounded, imbricated in æstivation, one and a half to 2 lines long. *Stamens as many as the lobes of the corolla and alternate with them*, or rarely one or two more, *inserted on its short tube:* filaments subulate, flattened, about half the length of the lobes of the corolla: anthers didymous, two-celled, introrse; the cells opening longitudinally, in many of the fertile flowers smaller and *effete*. Hypogynous disk none. *Ovary* closely sessile in the calyx, globular, *12–18-celled;* in the sterile flowers smaller and imperfect. *Stigma closely sessile, broad, discoid, radiate* with 12 to 18 lines, *depressed in the centre*, persistent. *Ovules solitary in each cell, suspended from its apex*, anatropous; the *rhaphe dorsal*. *Drupe baccate*, spherical, 12–18-grooved when immature or dry, 3 or 4 lines in diameter, black, containing from 12 to 18 separable *pyrenæ* or nucules, which are of a fibrous-cartilaginous texture, smooth, and moderately grooved on the back. Seed filling the cell, with a thin testa. *Embryo minute at the apex of the fleshy albumen:* radicle superior.

PLATE 26.—BYRONIA SANDWICENSIS: a plant in flower and fruit. Fig. 1. A sterile flower, with 6 petals and stamens. 2. Corolla of 8 petals and stamens, displayed. 3. Calyx and ovary of the same. 4. Interior, and 5, an exterior view of a stamen. 6. A fertile flower. 7. Vertical section of the same. 8. An ovule detached. 9. Transverse section of the ovary. 10. Drupe, with the persistent calyx. 11. Transverse section of the same. 12. Vertical section of a drupe.

2. BYRONIA TAITENSIS, Sp. Nov. (Tab. 25.)

B. foliis spathulato-oblongis seu lanceolato-oblongis; staminibus fl. masc. quandoque petalis numero duplis; ovarii loculis pyrenisque 10–12.

HAB. Mountains of Tahiti, Society Islands.

Apparently an arborescent species, nearly related to the preceding; from which it is distinguished by its less reticulated and narrower, *spatulate-oblong, or lanceolate-oblong leaves* (from 2½ to 4 inches in length, and an inch or rarely more in breadth), the base usually tapering into the short petiole; and by the *fewer* (only 10 or 12) *cells to the ovary and fruit.* The corolla is occasionally five-parted, but more frequently six-parted, the calyx in both cases being only four-lobed. In all the fertile flowers examined the (sterile?) stamens are uniformly of the same number as the divisions of the corolla; but in some sterile flowers they are more numerous, usually *twice as many!*

The inflorescence is commonly more developed, and with more numerous flowers than in the specimen delineated in the plate, at least in the sterile plant; in one specimen of which the peduncles are two inches long, and the trichotomous cyme equals the leaves.

PLATE 25, *B.*—BYRONIA TAITENSIS: a branch with sterile flower-buds, and another in fruit. Fig. 1. Unexpanded sterile flower. 2. Sterile flower with the hexamerous corolla and stamens displayed: the calyx and pistil underneath. 3. A seven-cleft corolla of a sterile flower, with 12 stamens displayed. 4. A drupe. 5. The same, transversely divided. 6. Vertical section of a drupe, showing a section of one seed, and its embryo.

4. VILLARESIA, *Ruiz & Pav.*

1. VILLARESIA MUCRONATA, *Ruiz & Pav.*

Villaresia mucronata, Ruiz & Pav. Fl. Per. & Chil. 3, p. 9, t. 231; A. Juss. in Ann. Sci. Nat. 25, p. 14, t. 5, f. 2; Gay, Fl. Chil. 2, p. 13.
Citronella mucronata, Don. in Edinb. New Phil. Jour. 13, p. 243.

HAB. Chili, near Valparaiso. (Foliage only.)

ORD. OLACACEÆ.

SUBORD. I. ICACINEÆ.

1. PLEUROPETALON, *Blume.*

Char. paullo auctus, nempe: *Flores hermaphroditi, polygami, vel abortu monoici. Calyx aut parvus aut mediocris.* Cæt. ut in opere infra cit.

PLEUROPETALON, Blume, Mus. Bot. Lugd.-Bat. p. 248, non Hook. f.

1. PLEUROPETALON SAMOENSE, Sp. Nov. (Tab. 27.)

P. foliis late ovatis; thyrso virgato racemiformi puberulo; floribus hermaphroditis ad apicem pedunculorum partialium brevium glomeratis; sepalis rotundatis ciliatis.

HAB. Samoan or Navigators' Islands: the particular habitat not recorded.

Shrub glabrous, except the *inflorescence*, which is *minutely pubescent*, at least when young. *Leaves broadly ovate*, 4 or 5 inches long, and 3 inches or more in width, on petioles of half an inch in length, alternate, often oblique, slightly acute or pointed, entire, rather coriaceous in texture, loosely veined and reticulated, the lower surface dull, the upper rather shining. Inflorescence terminal, pedunculate; the *flowers* apparently all *hermaphrodite, clustered on the apex of very short peduncles* (3 lines long), which are crowded on the elongated rhachis; forming a dense, *virgate, raceme-like thyrsus* of 6 inches or more in length. Bracts subulate and minute. Bractlets ovate, scarious, minute, ciliate. Flower-buds nearly sessile, cylindraceous, 2½ lines long. Calyx one-third of the length of the corolla, of 5 distinct, nearly *orbicular*-ovate and scariously margined, imbricated *sepals*, their edges hirsutely *ciliate*. Corolla hypogynous, deciduous perhaps before expansion, glabrous; the 5 linear-oblong and somewhat spatulate petals connivent, slightly united towards the base by means of the stamens, their margins thin and lightly imbricated in æstivation, except near the summit, where the æstivation is valvate-induplicate, the margins being strongly inflexed; their inner face bears an elevated and fleshy central crest or ridge, which is abruptly thinner and three-forked above the middle, the lateral divisions divergent and evanescent near the margins, the middle one prolonged to the apex. Stamens 5, hypogynous, almost as long as the petals, alternate with them, and occupying the space between their salient ridges: filaments elongated, subulate, thickish and fleshy, glabrous, below lightly coherent with the petals: anthers cordate-oblong, two-celled, very obtuse or retuse; the cells acutish at the base and thence distinct up to the middle, where the anther is introrsely attached to the acute apex of the filament, longitudinally dehiscent. Pollen spherical, simple. There are no sterile stamens. Hypogynous disk obsolete, or none. Ovary free, closely sessile in the persistent calyx, oblong-ovoid, one-celled, nearly symmetrical, marked with a slight salient ridge on one (the anterior) side, tapering into the style, which is slender, subulate-filiform, straight or nearly so, and central, longer than the ovary, lightly grooved for its whole length on one (the posterior) side, and terminated by a subcapitate emarginate stigma. Within, the ovary is destitute of incomplete partitions or of any abortive cells; but there is a slight and obtuse longitudinal ridge occupying the whole length of the posterior or placental side of the cell. Ovules 2, collateral, suspended from the summit of the cell on the posterior side, anatropous, apparently furnished with a single proper coat, which however is adherent to the nucleus. Fruit unknown.

Although all the flowers examined are hermaphrodite, yet, as considerable diversity in the length of the style is noticed, the plant may prove to be polygamous. In that case it would accord in all essential respects with the characters of Blume's genus *Pleuropetalon;* a genus manifestly allied to *Icacina* and *Rhaphiostylis* (Planch. in Hook. Niger Flora). The ovary is not gibbous, as in the latter genus, and the slender groove of the style in our plant extends for its whole length.

The æstivation of the corolla at once distinguishes it from all other Icacineous genera, except the *Bursinopetalum* of Wight, which also has an imbricative æstivation, according to Mr. Miers. On which account, indeed, this acute author, in his profound and elaborate memoirs on the *Olacineæ*, *Icacineæ*, &c.,* refers both *Bursinopetalum* and Blume's *Pleuropetalon* (which he supposes to be one and the same genus) to the order *Aquifoliaceæ*, next to the anomalous genus *Villaresia*. But, from the examination of one or two young flower-buds of *Bursinopetalum arboreum*, I should say, with Dr. Wight, that the æstivation of the thick petals was of the valvate kind, as truly so as in *Clematis*. Their thick and abrupt edges appear to be apposite throughout, next the base without any modification, while higher up a thin margin is induplicate, and at the apex these thin margins, more strongly induplicate, form the deeply inflexed apical appendage. In *Pleuropetalon*, at least in our species (for I have not seen that of Blume), the imbricative and the induplicate-valvular modes of æstivation are truly combined in the same organ; the thin edges of the petals overlapping each other, in the normal quincuncial manner, except near the apex, where the inflexion begins: here their margins abruptly become induplicate, as is represented in the accompanying figures, bringing this portion of the æstivation into the valvular category. The æstivation of the corolla seldom affords an ordinal character free from all exceptions; and the modification in these two genera would seem wholly insufficient to exclude them from the *Olacaceæ*, or *Icacinaceæ*, unless supported by other characters; whereas, in fact, they appear fully to accord in all other respects with the characters assigned by Mr. Miers to his *Icacinaceæ*. *Pleuropetalon* at least, with its simple pistil, one-celled and biovulate ovary, and slender style, would surely seem much out of place in *Aquifoliaceæ*. As to the generic difference between *Bursinopetalum* and *Pleuropetalon*, now confirmed by a second species, apparently there can be little question. *Bursinopetalum* has a merely five-lobed calyx, with its tube adnate to the ovary, which contains a single ovule, and is surmounted by a very short and conical style. *Pleuropetalon* has a calyx of five distinct sepals, entirely free from the biovulate ovary, and the style is long and filiform. Its fruit unfortunately is unknown.

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* In the Annals and Magazine of Natural History, New Series, vols. 8, 9, 10; especially vol. 8, p. 169, and 9, p. 223.

Whether the *Icacineæ* should form a distinct order, with affinities in some respects different from those of the *Olacaceæ*, as is ably argued by Mr. Miers, or whether they may still be arranged as a suborder of *Olacaceæ*, is a question which I am not competent to decide. It is merely more convenient on the present occasion to adhere to the older view.

The *Pleuropetalum* of Dr. Hooker is several years older than the *Pleuropetalon* of Blume; but, since the name of the former genus has already been changed by Moquin-Tandon, on account of its inappropriateness (the plant being apetalous), the latter should be continued.

PLATE 27.—PLEUROPETALON SAMOENSE: in flower. Fig. 1. A branch of the inflorescence, or peduncle, with unexpanded flowers. 2. Transverse section of the flower-bud through the calyx: 3, of the same, above the calyx, showing the slightly imbricated æstivation of the corolla: 4, of the corolla near the apex, the æstivation there induplicate. 5. A petal, seen from within. 6. A stamen, seen from within. 7. The same, seen from without. 8. Vertical section of a flower-bud, through the ovary, showing the two suspended ovules, &c. 9. The pistil, seen from the side which is directed towards the axis of the inflorescence: the calyx torn away from the torus. 10. The same, transversely divided. The details magnified.

2. RHYTIDANDRA, Nov. Gen.

Flores hermaphroditi. Calyx parvulus; tubo cum ovario connato; limbo cupulari truncato, margine 6–7-denticulato. Corollæ epigynæ petala 6–7, linearia, conniventia, æstivatione valvata. Stamina 6–7, petalis alterna, cum iisdem inserta, libera: filamenta brevissima, intus barbata: antheræ lineares, introrsum adnatæ, dithecæ, quadrilocellatæ, locellis transversim annulato-rugosis vel cameratis. Discus epigynus scutelliformis. Ovarium inferum, uniloculare, uniovulatum; ovulo ex apice loculi parvi suspenso. Stylus elongatus, sulcatus, bifidus, lobis sæpius apice bi–tridentatis; stigmatibus terminalibus parvis. Fructus ignotus.—Frutex sarmentosus, foliis ovatis obliquis, pedunculis axillaribus cymulam paucifloram gerentibus.

1. Rhytidandra Vitiensis, Sp. Nov. (Tab. 28.)

Hab. Feejee Islands. (The particular habitat is not recorded.)

Only a single specimen, with unexpanded flowers, occurs in the collection. The plant appears to be a *shrub*, with slender and *sarmentose* branches, glabrous, or the young parts more or less cinereous-puberulent. *Leaves* alternate, petioled, *ovate*, *oblique*, unequal at the base, acuminate, entire, or obscurely repand, 3 or 4 inches long and one and a half to 2 inches wide, membranaceous, sparingly feather-veined; the veins connected by transverse veinlets. Stipules none. *Peduncles axillary*, longer than the petioles (half an inch or more in length), *bearing a few-*(7–12-)*flowered small cyme*. Pedicels short, minutely unibracteolate at the apex, where they are articulated with the flower. Unexpanded flowers 3 lines long, minutely silky-canescent, *hermaphrodite*. *Calyx small*, about a line or a line and a half long, including its turbinate *tube*, *which coheres with the ovary* throughout; the free summit or *limb cup-shaped*, half a line long, *truncate*, *the border obscurely* 6–7-*toothed*. *Petals* 6 *or* 7, inserted at the junction of the free part of the calyx with the summit of the ovary, without the intervention of any manifest perigynous disk, *linear*, *valvate in æstivation*, apparently *distinct* in anthesis, and deciduous, of a thickish texture, glabrous, and destitute of any appendage inside. *Stamens as many as the petals and alternate with them*, *inserted with them*, and equalling them in length, not cohering with their bases. *Filaments extremely short*, *bearded inside*, continued into a smooth and unappendaged connective; to which the *four cells of the long and linear anther are introrsely adnate*. These slender cells, or *loculi*, are *transversely constricted* at short and irregular intervals (nearly as in most species of *Gomphia*), so as to appear more or less necklace-shaped or chambered: their dehiscence is not obvious. *Style elongated* (about the length of the petals), central, glabrous, somewhat angled or grooved, two-cleft above the middle; the *divisions* filiform and somewhat flattened, 2–3-*toothed* or cleft at the apex; the *stigmas terminal*, small, and simple. *Ovary* turbinate, *one-celled*, with no vestiges of other cells or of incomplete partitions, not eccentric, fleshy, wholly *invested by the adnate calyx-tube*, except the truncate summit, which is covered by a *thin and flat* disk, perforated in the centre by the base of the style; the central and *very small cell* nearly filled by the *solitary* and *anatropous ovule*, which is *suspended* from its apex, without the intervention of any perceptible placental column, whether free or adnate. The ovule appears to be invested by a single coat; but this is uncertain.

Although this plant appears to belong to the *Olacaceæ* (taking that order in the most extended sense), I know of no genus with which it may be particularly compared. If rightly referred to this order, it must be viewed as a genus whose affinity tends toward *Styracaceæ* rather than *Santalaceæ*. The adherence of the calyx to the ovary, which to all appearance is perfect and immediate, is at variance with Mr. Miers' diagnoses both of *Olacaceæ* and *Icacinaceæ*. In the points in which these two groups differ, our plant accords with the latter, except that there is only a solitary ovule, suspended from the very apex of the cell. The elongated, quadrilocellate anthers, with their cells annular-constricted at short intervals, giving them a wrinkled appearance, are so different from those of any related plant known to me, that I have derived from the latter character the generic name, viz.: from ῥυτίς, ῥυτίδος, *a wrinkle or fold*, and ἀνήρ, ἄνδρα, botanically used for *stamen*.

PLATE 28.—RHYTIDANDRA VITIENSIS. Fig. 1. A flower-bud, with the short pedicel and a portion of the axis. 2. The corolla and stamens, displayed. 3. Vertical section of a flower-bud, showing the solitary ovule, &c. 4. A stamen, inside view. 5. The same, seen from the outside. 6. A transverse section of the same, inside view, more magnified. 7. Pistil, with the limb of the calyx removed, showing the flat epigynous disk. 8. Transverse section of the ovary. —All the details magnified.

SUBORD. II. OLACINEÆ.

3. XIMENIA, *Plumier.*

1. XIMENIA AMERICANA, *Linn.*

HAB. Brazil, near Rio Janeiro. (Fruit oval, or oblong.)

2. XIMENIA ELLIPTICA, *Forst.*

Ximenia elliptica, Forst. Prodr. Fl. Ins. Austr. p. 27; Labill. Sert. Austro-Cal. p. 34, t. 37; DC. Prodr. 1, p. 533.

HAB. Samoan or Navigators' and Feejee Islands: very common on the coast.

The fruit, "of the size of a green-gage plum, and sweet-scented," is spherical, as it is figured by Labillardiere. Otherwise the plant too closely resembles *Ximenia Americana*, to which, indeed, Decaisne (in Herb. Timor.) has joined it. The branches are either unarmed or spiny.

4. HEISTERIA, *Linn.*

1. HEISTERIA RADDIANA, *Benth.*

Heisteria Raddiana, Benth. in Hook. Niger Flora, p. 258, in not.

HAB. Brazil, in the vicinity of Rio Janeiro. (In fruit only.)

5. OLAX, *Linn.*

1. OLAX IMBRICATA, *Roxb.*

Olax imbricata, Roxb. Fl. Ind. 1, p. 169; DC. Prodr. 1, p. 532.

HAB. Philippine Islands: on the shores of Laguna, Baños, near Manilla, Luzon.

ORD. CORIARIACEÆ.

1. CORIARIA, *Niss. Linn.*

1. CORIARIA RUSCIFOLIA, *Linn.*

HAB. Bay of Islands, New Zealand: common. (In fruit.)

The New Zealand plant, *Coriaria sarmentosa* of Forster, Dr. Hooker has joined, apparently with good reason, to the Linnæan *C. ruscifolia*, of Chili and Peru. The baccate fructiferous perianth yields a palatable purple juice, which is much liked by the natives, and from which a kind of wine may be made: but the seeds are poisonous, as they are likewise in *C. myrtifolia*, of the south of Europe.

ORD. STACKHOUSIACEÆ.

1. STACKHOUSIA, *Smith.*

1. STACKHOUSIA SPATHULATA, *Sieber.*

Stackhousia spathulata, Sieber, in Spreng. Syst. Veg. Cur. Post. p. 124.
S. muricata, Lindl. Bot. Reg. sub t. 1917?

HAB. New South Wales, near Sydney and Puen Bueu. Also, Cook's River; a form with the rugose-reticulated cocci somewhat muricate, and the leaves broader.

2. **Stackhousia linariifolia**, *A. Cunn.* (*ined.?*)

Hab. Hunter's River and Puen Buen, New South Wales. (In fruit.)

Ord. SURIANACEÆ.

1. SURIANA; *Plumier.*

1. **Suriana maritima**, *Linn.*

Hab. Society Islands. Clermont Tonnere, Raraka, King's, Wilson's, and the Coral Islands generally. Mangsi Islands.

Ord. VIVIANACEÆ.

1. VIVIANIA, *Cav.*

1. **Viviania marifolia**, *Cav.*

Viviania marifolia, Cav. in Ann. Cienc. Nat. 7, p. 211, t. 49; Gay, Fl. Chil. I, p. 397.

Hab. Andes of Chili, above Santiago.

ORD. GERANIACEÆ.

1. GERANIUM, *Linn.*

§ 1. GERANIUM VERUM.

1. GERANIUM DISSECTUM, *Linn.*

HAB. Rio Negro, North Patagonia (nearly the *G. Patagonicum,* Hook. f. Fl. Antarc. p. 252). Chili, from Valparaiso to the Andes above Santiago. Bay of Islands, New Zealand (the var. *retrorsum* and var. *glabratum,* Hook. f.). New South Wales (*G. pilosum,* Forster, &c.).

I adopt Dr. Hooker's view, in referring the *Geranium pilosum* and *G. retrorsum* of Forster, as well as his own *G. Patagonicum,* to the European *G. dissectum.* At least, sufficient characters for distinguishing them have not been detected.

2. GERANIUM POTENTILLOIDES, *L'Her.*

Geranium potentilloides, L'Her. in DC. Prodr. 1, p. 639; Hook. f. Fl. N. Zeal. p. 40.
G. microphyllum, Hook. f. Fl. Antarc. p. 8, t. 5; Raoul, Pl. N. Zel. p. 47.

HAB. Bay of Islands, New Zealand. (A form between the var. *microphyllum* and var. *debile,* Hook. f. l. c.)

3. GERANIUM DIFFUSUM, *H. B. K.*

Geranium diffusum, H. B. K. Nov. Gen. & Spec. 5, p. 230; DC. Prodr. 1, p. 639.

HAB. Baños, Andes of Peru. (Also (not in flower), island of San Lorenzo, near Callao).

This species has been collected in Peru by Matthews, M'Lean, &c., and near Quito by Jameson and Hall. If the specimen from the island of San Lorenzo truly belongs to the species, it has a thick and fleshy, fusiform, perennial root. The leaves are softly hairy, above as well as below. On small specimens and on ultimate branches they are as small as described by Kunth (7 or 8 lines broad); but the larger ones are an inch in diameter. Only the lower peduncles are shorter than the petioles; the upper are longer than the leaves. Petals 3 or 4 lines long, exceeding the calyx. Carpels sparingly pubescent. Seed smooth and even, or more obscurely reticulated under a lens than in *G. dissectum*. From the character, it would seem that *G. Berterianum* of Colla may be the same plant.

4. GERANIUM SESSILIFLORUM, *Cav.*

Geranium sessiliflorum, Cav. Diss. 4, p. 198, t. 77; DC. Prodr. I, p. 639; Walp. Rel. Meyen. p. 315; Hook. f. Fl. Antarc. p. 252.

HAB. Obrajillo, Baños, and Alpamarca, Andes of Peru. (Also gathered by M'Lean and Matthews, fide herb. Hook.)

5. GERANIUM CRASSIPES, *Hook. in Herb.*

G. nanum, cæspitosum, acaule; caudice crasso multicipite stipulis imbricatis obtecto; foliis cum petiolis undique cano-sericeis 5–7-partitis, segmentis oblongis obovatisve confertis integerrimis vel bilobatis; pedunculis brevissimis unifloris; sepalis sericeis muticis; coccis pubescentibus; seminibus lævibus.

HAB. Obrajillo, Andes of Peru. (Cerro Pasco, Matthews, in herb. Hook.)

Plant *dwarf* and stemless, forming dense *cæspitose* tufts, of about an inch in height; the *caudex thick*, branching, the upper part *clothed* *with* the large and scarious, dark chestnut-coloured *imbricated stipules*, which are adnate to the base of the petioles. *Leaves* much crowded, *canescently-silky* all over, as well as the petioles, roundish in outline, 5–7-*parted;* the *segments oblong* or narrowly *obovate*, acute, not over 3 lines in length, *crowded*, *entire*, or sometimes, especially the middle one, two-lobed. *Peduncles one-flowered*, shorter than the leaves, among which they are partly hidden, silky-tomentose. Calyx in fruit as long as the peduncle; the *sepals silky* like the leaves, oblong-ovate, rather obtuse, *pointless*, nearly 3 lines long. Petals not seen. The persistent filaments nearly distinct, subulate from a broad base, as long as the calyx, a little hairy externally. Beak of the fruit 5 lines long, canescently pubescent, as are the carpels. *Seeds* with a *smooth* and even testa.

In the Peruvian and Quitensian Andes, there are some other, still undescribed species, allied to this, which I have not the means of elucidating.

6. GERANIUM MULTIPARTITUM, *Benth.?*

Geranium multipartitum, Benth. Pl. Hartw. p. 166?

HAB. Obrajillo; with the preceding species.

This species differs from the foregoing principally in its finer, but still canescent pubescence, its narrower stipules, and longer petioles, the segments of the leaves again 2–5-cleft or parted; the sepals narrower and less hairy. The single small specimen, is in fruit.

§ 2. NEUROPHYLLODES.—*Frutices vel arbusculæ Sandwicenses; pedunculis sæpe multifloris; staminibus omnino vel fere discretis; foliis omnibus alternis cuneatis ovalibusve nervosis!*

A remarkable group of plants, peculiar to the Sandwich Islands, whence we have four species, only one of which has been published. They are all shrubby plants, except possibly the first, and one of them is truly arborescent, with a trunk of three inches or more in diameter! They are further remarkable for their wedge-shaped or oval and *parallel-nerved* leaves, all of which are *alternate;* and the peduncles in some of them bear many-flowered cymes. The flowers and fruit, however, are just those of true Geraniums, except, perhaps, that the filaments are very slightly, if at all, united at the base. Their aspect, although peculiar, would lead one to refer them to *Pelargonium* rather than to *Geranium:* but their flowers are perfectly regular (except in *G. arboreum*) and symmetrical, and there is no trace of a spur or other downward prolongation of the calyx.—The first species, *G. multiflorum*, shows least of the peculiarities of the section in its foliage, which is thin, and with the nerves more branched and inosculating towards their summit than in the succeeding species. Its branches, moreover, are scarcely woody.

7. GERANIUM MULTIFLORUM, Sp. Nov. (Tab. 29.)

G. fruticosum? molliter pubescens; foliis membranaceis obovato-rotundatis grosse dentatis (basi subcuneata integerrima) utrinque viridibus; pedunculis elongatis cymam laxam multifloram gerentibus; sepalis mucronatis.

HAB. District of Waimea, Hawaii, Sandwich Islands.

The specimen is a single branch; and the notes upon the plant do not record the height which it attains, nor whether the stem is woody. But it probably is so, as the branch, although fistulous, is somewhat lignescent. It appears to have been broken from a decumbent stem. The young branchlets, peduncles, leaves, &c., are *softly pubescent* with fine and mostly spreading hairs; which on the young leaves are somewhat silky. *Leaves alternate*, approximate, *membranaceous* in texture, *roundish-obovate*, an inch and a half long, by an inch or more in width, *coarsely toothed*, except the more or less *cuneate base*, which is *entire*, *green on both sides*, 7–9-nerved from the base; the nerves more or less forked, and connected by anastomosing veinlets. Petioles about half an inch long, pubescent, terete. Stipules setaceous-subulate from a dilated and connate-clasping base, minutely hairy or ciliate, scarious, brownish, 4 or 5 lines long; their bases only adnate to the base of the petiole. *Peduncle* becoming lateral by the evolution of a branch, *elongated* (3 inches in length), bibracteolate in the middle and at its summit, where it branches into a repeatedly trichotomous, open and *loose, many-flowered cyme.* Bracts and bractlets ovate-lanceolate and subulate, scarious. Internodes of the cyme from 5 to 12 lines long: the pedicels from one to 3 lines long, erect, both in flower and in fruit. *Sepals* pubescent, ovate-oblong, *mucronate,* pubescent, with slightly scarious margins, 3 to 4 lines long. Petals obovate, entire, glabrous, a little longer than the calyx, equal and similar; their colour undetermined. Glands opposite the sepals, woolly. Stamens 10, all fertile and similar: filaments distinct, their dilated bases obscurely hairy; the five exterior ones a little shorter: anthers, &c., as in the genus. Ovary and beak pubescent; the latter 8 or 9 lines long. Styles little produced beyond the apex of the beak, above which their bases only are united; in fruit separating elastically from the base upwards, in the manner of the genus, glabrous inside. Cocci minutely pubescent. Seed with a smooth and even testa.

PLATE 29, *A.*—GERANIUM MULTIFLORUM: a flowering branch, of the natural size. Fig. 1. A sepal; inside view. 2. A petal. 3. Flower, from which the calyx and corolla have been removed. 4. Vertical section of a flower through the ovary, &c.—All the analyses moderately magnified.

8. GERANIUM CUNEATUM, *Hook.* (Tab. 29.)

G. fruticosum; foliis coriaceis cuneatis apice sæpius truncato 3–5-dentatis 5–7-nervatis; pedunculis plurifloris vel abortu paucifloris; sepalis mucronulatis; petalis albis.

Var. *α.* MENZIESII: *foliis utrinque glabris seu glabellis viridibus.* (Tab. 29, *B.*)

Geranium cuneatum, Hook. Ic. Pl. t. 198.

Var. *β* HYPOLEUCUM: *foliis subtus sepalisque argenteo-incanis nitentibus.* (Tab. 29, *C.*)

Var. *γ.* HOLOLEUCUM: *foliis utrinque sepalisque argenteo-incanis nitentibus.* (Tab. 29, *D.*)

HAB. Hawaii, Maui, and Kauai, Sandwich Islands; on the mountains. α. Aleala, Hawaii; a small form. β. Mouna Loa; a common shrub from the crater of Lua Pele to the elevation of 8,000 feet. Mountains of Kauai; a very small form, without flowers. γ. Mouna Kea; also Mouna Loa, with the preceding form; abundant through the region of *Edwardsia*. East part of Maui, on the banks of the crater Haleakala.

A *shrub*, one or two feet or more in height, much branched; the foliage very variable as to size and pubescence. Branches glabrate, or the younger ones cinereous, at least in vars. β. and γ., thickly beset with the scaly and persistent stipules. These are subulate from their dilated and connate bases, as in the foregoing species. *Leaves* crowded on the branchlets, *coriaceous* in texture, from 5 to 12, or even 18 lines long, and from 3 to 6, or 9 lines wide, *wedge-shaped*, with the *apex truncate*, or very obtuse, and 3–5-toothed, tapering to an acute base, the sides entire, *strongly 5–7-nerved;* the nerves parallel, simple, or very sparingly forked at their apex. Their surface is either *glabrous* or *glabrate* (very minutely pubescent under a lens), and green, as in the var. α.; or *silvery-white*, with a fine silky pubescence *underneath*, while the upper surface is green and glabrous or nearly so, as in var. β.; or else *silvery-whitened and shining* both sides, as in var. γ. Petioles 2 or 3 lines in length. *Peduncles* terminal or opposite the leaves, shorter than the leaves, or often elongated, cymosely *several-*(5–12-)*flowered*, *or by abortion* 1–3-*flowered;* the peduncles or branches of the cyme being pluribracteate. Bracts subulate, small. Pedicels 3 to 8 lines long. Sepals 2 or 3 lines long, ovate or oblong-ovate, barely mucronulate, nearly glabrous in the smooth-leaved form, in the others silky-canescent. *Petals white*, obovate, 4 or 5 lines in length. Hypogynous glands minute, hairy. Stamens as in *G. multiflorum;* but the filaments rather more hairy at their dilated base. Ovary and beak minutely pubescent. Styles little prolonged beyond the beak, their summits distinct; in fruit recurved from the base, glabrous inside. Seed smooth and glabrous, very minutely striate-reticulated under a lens.

The specimen gathered by Menzies, in Vancouver's voyage, and figured by Hooker, resembles the more common form of our var. *hololeucum*, except that the leaves are wholly glabrate. The specimens of our glabrous variety are smaller in all their parts, and were apparently gathered at a greater elevation; they have short and few-flowered peduncles, and are wholly in fruit. The form of var. *hypoleucum* from Kauai apparently came from a great elevation: the plants are only a span high, naked, as if they had grown in moss; the branches tipped with a cluster of small leaves, and destitute of flower and fruit. The var. *hololeucum* usually exhibits the largest leaves and a fuller cyme of flowers.

PLATE 29. *B, C, D.*—GERANIUM CUNEATUM.—*B.* Var. MENZIESII: a dwarf state, in fruit. Fig. 5. Seed, magnified. 6. The embryo, detached and cut across, magnified.—*C.* Var. HYPOLEUCUM: in flower. Fig. 7. Sepal. 8. Petal. 9. A filament.—The dissections enlarged. —*D.* Var. HOLOLEUCUM, of the natural size.

9. GERANIUM OVATIFOLIUM, Sp. Nov. (Tab. 30.)

G. fruticosum; foliis chartaceis longe petiolatis ovatis acutis argute serratis (basi rotundata tantum integerrima) 7–11-*nervatis supra sæpius glabratis subtus sericeo-canescentibus; pedunculis paucifloris; sepalis mucronulatis; petalis albis venis purpureis pictis.*

HAB. East division of Maui, Sandwich Islands, on the north bank of the crater Haleakala.

Shrub apparently of 2 or 3 or several feet in height, with spreading branches, which are thickly scarred, or the branchlets clothed with the conspicuous, connate, subulate-pointed, scaly, persistent stipules, which are like those of the two preceding species. *Leaves chartaceous,* or nearly membranaceous, or in a stunted form coriaceous, *ovate,* more or less *acute,* rather finely but *sharply serrate* with appressed mucronate teeth, except towards the obtuse or *rounded base,* which is entire, from one to 2½ inches long, 7–11-*nerved;* the nerves sparingly forked or branched and inosculating; the *upper surface glabrate* and green, or rarely canescent when young; the *lower* more or less whitened with a fine *silky* or *silvery pubescence.* Petioles slender, pubescent, from half an inch to 1½ inches in length. Peduncles opposite the leaves, or terminal, an inch or so in length, usually forked, *few-*(3–7-)*flowered,* or by abortion one-flowered; the peduncle or its branches pluribracteate. Flowers rather larger than those of *G. cuneatum;* the *sepals mucronulate,* ovate-oblong, sometimes tinged with purple. "*Petals white, with purple veins.*" Stamens, styles, &c., nearly as in the preceding species. Seed minutely striate-reticulated under a lens.

PLATE 30.—GERANIUM OVATIFOLIUM: branches, of the natural size. Fig. 1. A sepal, inside view. 2. A petal. 3. Flower, from which the calyx and corolla have been removed. 4. Calyx and fruit. 5. A seed.—All the details enlarged.

10. GERANIUM ARBOREUM, Sp. Nov. (Tab. 31.)

G. arborescens, parce pubescens; foliis chartaceis vel membranaceis ovatis seu ovalibus obtusis plerumque subcordatis argute serratis 7-nervatis utrinque concoloribus; pedunculis folio brevioribus uni–bifloris; sepalis aristato-acuminatis; petalis rubris "superioribus cucullatis;" stylis coalitis ultra rostrum longe productis.

HAB. Eastern part of the island of Maui, Sandwich Islands; near the upper border of the forest, at about the elevation of 6000 feet.

An *arborescent* species; the trunk becoming 4 inches or more in diameter, and attaining the height of 6 to 12 feet! Branchlets squarrose with the persistent stipules; which are like those of the preceding species, when young *pubescent* with fine and soft hairs, as are the leaves, peduncles, calyx, &c. *Leaves chartaceous or membranaceous* in texture, *ovate,* or sometimes nearly *oval, obtuse,* rounded, and usually *subcordate* at the base, *sharply serrate* almost down to the base with mucronate teeth, about seven-nerved (the nerves sparingly branching, especially the marginal ones), nearly of the same hue both sides, softly pubescent, more or less glabrate with age, an inch to 1½ inches long, the larger ones over an inch in width. Petioles from 3 to 8 lines long. *Peduncles* 1–2-*flowered,* perhaps sometimes three-flowered, terminating the branches, or opposite the leaves, from half an inch to an inch in length, with one or more pairs of subulate bracts. Flowers larger than in any of the cognate species, not unlike those of a *Pelargonium,* but destitute of all traces of an adnate spur, and the stamens all alike and fertile. *Sepals* oblong or oblong-lanceolate, abruptly *awn-pointed*, half an inch long. "*Petals red*," obovate-spatulate, 8 or 9 lines long, equal and similar in shape, but, according to Dr. Pickering, the three *upper* are more upright and *cucullate*, the lower more spreading. Hypogynous glands inconspicuous. Filaments 10, similar, and all antheriferous, capillary, persistent, longer than the sepals after anthesis, sparsely hairy, more densely so at their dilated base. Ovary villous. *Styles* hairy as far as they are united with the slender beak (7 or 8 lines long in fruit), then glabrous and *prolonged* for half an inch as a filiform compound style, their separate and stigmatose apices short. Carpels hairy in fruit. Seed glabrous, minutely reticulated under a lens.

To this most remarkable species belongs a portion of a stem in the museum of the Exploring Expedition, marked by Mr. Brackenridge, "Stem of a *Pelargonium*, from the mountains of Maui." This stem is three inches in diameter, with a smooth and thin bark: the wood is pretty hard, compact, and close-grained: it exhibits about fourteen indistinct concentric layers, surrounding a small pith, and traversed by rather conspicuous medullary rays. Its intimate structure does not present any marked peculiarity.

The plant would be a curious and striking one in cultivation. The flowers are said by the collectors, Dr. Pickering and Mr. Brackenridge, to be quite showy;—more so, doubtless, than they would appear to be from our figure; the scanty flowering specimens in the collection not being in a very good state. Nor does the plate distinctly represent the irregularity of the corolla; this peculiarity (which is not shared by the other species of the group) having been made known to us by Dr. Pickering, only since this sheet was in type. Notwithstanding their unequal direction, the petals appear to be all alike in shape and size: nor does the species partake of any other characters of *Pelargonium*, except, perhaps, in the general habit and foliage.

PLATE 31.—GERANIUM ARBOREUM: branchlets, of the natural size, in flower and fruit. Fig. 1. A sepal; inside view. 2. A petal. 3. Flower, vertically divided through the ovary. 4. Stamens, seen anteriorly and posteriorly. 5. Pistil, in fruit, with the persistent stamens and calyx. 6. A seed. 7. Transverse section of the same. —The details variously magnified.

2. ERODIUM, *L'Her.*

1. Erodium cicutarium, *Leman.*

Hab. Rio Negro, North Patagonia. Obrajillo and Baños, Andes of Peru. A minute form, apparently of this widely diffused species, was gathered on the high Chilian Andes, above Santiago.

2. Erodium malachoides, *Willd.*

Hab. Obrajillo, Andes of Peru. Doubtless introduced from Europe.

3. PELARGONIUM, *L'Her.*

1. Pelargonium clandestinum, *L'Her.*

Pelargonium clandestinum, L'Her. ined.; A. Cunn. in Ann. Nat. Hist. 3, p. 117; Hook. f. Fl. N. Zeal. p. 41.
P. Acugnaticum, Thouars, Fl. Tristan d'Acugn. p. 44, t. 13 (1811); DC. Prodr. 1, p. 660.
P. anceps, Ait. Hort. Kew. 2, p. 40?

Hab. Bay of Islands, New Zealand.

2. Pelargonium australe, *Willd.*

Pelargonium australe, Willd. Spec. 3, p. 675; DC. Prodr. 1, 654; Hook. Jour. Bot. 2, p. 415.

Hab. Sydney, Woolongong, &c., New South Wales: several forms.

3. Pelargonium cucullatum, *Ait.*

Hab. Cape of Good Hope; in the immediate vicinity of Cape Town.

4. PELARGONIUM MYRRHIFOLIUM, *Ait.*

HAB. Cape of Good Hope; in the immediate vicinity of Cape Town.

ORD. TROPÆOLACEÆ.

1. TROPÆOLUM, *Linn.*

1. TROPÆOLUM MAJUS, *Linn.*

HAB. Around Lima and Callao, Peru: common in waste grounds.

2. TROPÆOLUM TUBEROSUM, *Ruiz & Pav.*

Tropæolum tuberosum, Ruiz & Pav. Fl. Per. 3, p. 77, t. 314, f. 6; Hook. Bot. Mag. t. 3714, & Ic. Pl. t. 653.

HAB. High Andes of Peru; very common from Obrajillo to Culnai. Also, cultivated below Culnai. "Root edible, even in a raw state."

3. TROPÆOLUM TRICOLOR, *Lindl.*

Tropæolum tricolor, Lindl. Bot. Reg. t. 1935; Gay, Fl. Chil. 1, p. 411.
T. tricolorum, Sweet, Brit. Fl. Gard. t. 270; Hook. & Arn. Bot. Beech. Voy. p. 14; Hook. Bot. Mag. t. 3169.

HAB. Ravines, near Valparaiso: without flowers or fruit.—Similar sterile specimens occur in the Sandwich Islands collection, from Puna, Hawaii: probably from a cultivated plant.

ORD. LINACEÆ.

1. LINUM, *Linn.*

1. LINUM MACRÆI, *Benth.*

Linum Macræi, Benth. in Bot. Reg. sub no. 1326; Planch. in Hook. Lond. Jour. Bot. 7, p. 490.
L. aquilinum, Molina, Hist. Nat. Chil.? DC. Prodr. I, p. 126?

HAB. Near Valparaiso, Chili.

In these specimens, the sepals have smooth and even margins, and the styles are united to the very summit. The stipular glands are occasionally present in these, as also in the original specimens of *L. Macræi.*

2. LINUM POLYGALOIDES, *Planch.*

Linum polygaloides, Planch. in Hook. Lond. Jour. Bot. 7, p. 490.
L. oligophyllum, Presl, Rel. Hænk. 2, p. I, haud Willd. ex Planch.

HAB. Obrajillo, Andes of Peru.

3. LINUM MONOGYNUM, *Forst.*

Linum monogynum, Forst. Prodr. Fl. Ins. Austr. p. 23; Hook. Bot. Mag. t. 3574; Hook. f. Fl. N. Zeal. p. 28.

HAB. Bay of Islands, Waya-ruru Bay, New Zealand.

4. LINUM MARGINALE, *A. Cunn.*

Linum marginale, A. Cunn. in herb. Hook.; Planch. in Hook. Lond. Jour. Bot. 7, p. 169.

HAB. Sydney, New South Wales.

The root certainly appears to be that of a merely annual plant.

5. LINUM AFRICANUM, *Linn.*

HAB. Cape of Good Hope, in the vicinity of Cape Town.

ORD. OXALIDACEÆ.

1. OXALIS, *Linn.*

* *Cosmopolitanæ.*

1. OXALIS CORNICULATA, *Linn.*

HAB. Organ Mountains, Brazil. Lima, Peru (a very hairy form). Tahiti. Samoan Islands. Oahu and Hawaii, Sandwich Islands. Bay of Islands, New Zealand;—the varieties which answer to var. γ. *microphylla*, Hook. f. (the *O. exilis* and *O. microphylla*, A. Cunn., and *O. reptans*, Forster); var. δ. *ciliifera*, Hook. f. (*O. ciliifera*, A. Cunn.); and var. ε. *crassifolia* (*O. crassifolia*, A. Cunn.). New South Wales; several forms, among them the *O. microphylla*, Poir. Baños, Luzon. St. Helena. Cape of Good Hope.

* * *Brasilienses.*

2. Oxalis fruticosa, *Raddi.*

Oxalis fruticosa, Raddi, Mem. Bras. Add. p. 22; DC. Prodr. 1, p. 690; St. Hil. Fl. Bras. 1, p. 116.

Hab. Near Rio Janeiro; abundant.

3. Oxalis Barrelieri, *Jacq.*

Oxalis Barrelieri, Jacq. Oxal. no. 4, t. 3 (Barr. Ic. t. 1169); DC. Prodr. 1, p. 690.

Hab. Rio Janeiro.

4. Oxalis hedysaroides, *H. B. K.*

Oxalis hedysaroides, H. B. K. Nov. Gen. & Spec. 5, p. 247; DC. Prodr. 1, p. 691; Zucc. Monogr. Amer. Oxal. p. 50.

Hab. Rio Janeiro, and on the Organ Mountains, Brazil.

5. Oxalis Martiana, *Zucc.*

Oxalis Martiana, Zucc. Monogr. Amer. Oxal. p. 20, & Nachtr. p. 27; Hook. Bot. Mag. t. 3938.
O. urbica, St. Hil. Fl. Bras. Mer. 1, p. 126.
O. floribunda, Link & Otto, Abbild. Gewäsch. 1, p. 19, t. 10.
O. lasiopetala, Zucc. l. c.? Hook. Bot. Mag. t. 3932.
O. bipunctata, Graham, in Bot. Mag. t. 2781.

Hab. Roadsides, near Rio Janeiro: common.

There are also specimens gathered at Hilo, Hawaii, Sandwich Islands, marked by Mr. Brackenridge as probably not indigenous: doubtless it was introduced from Brazil.

* * * *Peruvianæ et Chilenses.*

6. OXALIS ELEGANS, *H. B. K.*

Oxalis elegans, H. B. K. Nov. Gen. & Spec. 5, p. 182, t. 466; Zucc. Monogr. l. c.

HAB. Near Lima, Peru;—where the same form, with smaller flowers than in the figure above cited, was gathered by Matthews.

7. OXALIS LOBATA, *Sims.*

Oxalis lobata, Sims, Bot. Mag. t. 2886; Zucc. l. c. p. 25; Gay, Fl. Chil. 1, p. 426.

HAB. Dry grounds around Valparaiso, Chili; common.

8. OXALIS LINEATA, *Gill.*

Oxalis lineata, Gillies, in Hook. Bot. Misc. 3, p. 162; Gay, Fl. Chil. 1, p. 439.
O. polyantha, Walp. Rel. Meyen. p. 319, ex char.

HAB. High Andes, above Santiago, Chili.—An alpine state of the species, with smaller leaves and creeping rootstocks; not in flower.

9. OXALIS GEMINATA, *Hook. & Arn.*

Oxalis geminata, Hook. & Arn. Bot. Misc. 3, p. 165; Gay, Fl. Chil. 1, p. 457.

HAB. High Andes, above Santiago, Chili. (Not in flower.)

10. OXALIS PYGMÆA, Sp. Nov.

O. parva vel minima, e radice annua? subcaulescens, parce hirsutula; stipulis conspicuis scariosis petiolo ad medium usque adnatis apice libero fimbriatis; foliis trifoliolatis; foliolis obcordatis; pedunculis *unifloris folio æquilongis medio tribracteolatis; bracteolis angustissime linearibus; flore minimo; petalis integris luteis; ovarii loculis uni-ovulatis; seminibus rugosis.*

HAB. Near Baños, and Culnai, on the high Andes of Peru.

A *very small* or *minute* plant, half an inch to an inch high, branching, from a slender and apparently *annual root*, into a number of very short stems or rootstocks, which are scaly with persistent stipules, *minutely and sparsely hairy* under a lens, especially the leaves. *Stipules conspicuous* and large for the size of the plant, 4 or 5 lines long, *scarious*, very thin, *adnate to the lower half of the petiole*, their *free apex fimbriately cleft* into setaceous or linear lobes. The free portion of the petiole filiform, scarcely margined or dilated. *Leaflets* 3, *obcordate*, from one to 2½ lines long, thickish, areolate-punctate, nearly sessile. *Peduncles one-flowered*, filiform, *about the length of the leaves, bibracteolate near the middle* with a pair of scarious, *narrowly linear bractlets*, which are entire, or nearly so. *Flower minute*, at most 1½ lines in length. Sepals oblong, obtuse, glabrous. *Petals* obovate, *entire*, or barely retuse, "*yellow*," scarcely exceeding the sepals, apparently more or less united above the base. Filaments glabrous. Styles short, glabrous. Stigmas capitate. *Cells of the ovary* apparently *one-ovuled*. *Seed* solitary in each cell of the globular-ovoid membranaceous capsule, ovoid; the integument transversely *rugose*.

This is doubtless related to the Bolivian *Oxalis parvula* of Remy (perhaps *O. nubigena* of Walpers); which is more strictly acaulescent, glabrous, with white and obcordate petals, and the cells of the ovary many-ovuled.

11. OXALIS PICKERINGII, Sp. Nov.

O. caulescens e radice fusiformi lignescente, viscoso-pubescens; stipulis nullis; foliis trifoliolatis; foliolis parvis obovato-cuneatis emarginatis glabratis petiolulatis; pedunculis folium superantibus apice bifidis cymoso-plurifloris; pedicellis bracteolis lanceolatis brevioribus; sepalis ovato-acuminatis capsula oligosperma longioribus; filamentis stylisque viscoso-barbatis.

Hab. Between Caballeros and Obrajillo, and near Baños, Andes of Peru.

Stems 3 or 4 inches high, very numerous from the long and *fusiform woody root*, ascending, branching, *viscous-pubescent*, as are the slender petioles, peduncles, &c. *Stipules none*. *Leaflets* 3, *very small* (only a line and a half in length), distinctly *petiolulate*, thickish, pale, *becoming glabrous*, *obovate* and *wedge-shaped*, the apex *notched*, or slightly obcordate. *Peduncles* axillary, *longer than the leafstalks*, an inch or more in length, naked, *two-cleft at the apex*, *cymosely several-flowered:* the two branches usually undivided; each node bearing a pair of *lanceolate bractlets*, of about a line in length, which subtend a single flower. *Pedicels shorter* than the bractlets. *Sepals ovate* or ovate-lanceolate, gradually *acuminate*, 2 to 3 lines long, much shorter than the petals, the colour of which cannot be determined. *Filaments* thickened upwards, exceeding the styles, and like them *bearded with viscous hairs;* the longer ones often toothed near the base. Stigmas capitate. *Capsule* ovoid, *shorter than the calyx*, very *few-seeded*. Seeds ovoid, rugose.

* * * * *Antarcticæ.*

12. Oxalis Magellanica, *Forst.*

Oxalis Magellanica, Forst. in Comm. Gœtt. 9, p. 33; Hook. f. Fl. Antarc. p. 253, & Fl. N. Zeal. p. 42, t. 13.
O. lactea, Hook. Jour. Bot. 2, p. 416, ex Hook. f.
O. cataractæ, A. Cunn.; Hook. Ic. Pl. t. 418, ex Hook. f.

Hab. Orange Harbour, Fuegia.

There are two forms in the collection: one of them, in fruit, well agrees with Dr. Hooker's figure, from New Zealand specimens: the other is smaller in all its parts, and more delicate. The seeds are obscurely ribbed longitudinally, but not transversely wrinkled.

* * * * * *Capenses.*

13. Oxalis hirta, *Linn.*

Hab. Cape of Good Hope, in the vicinity of Cape Town.

14. OXALIS PURPUREA, *Jacq.*

HAB. Cape of Good Hope, in the immediate vicinity of Cape Town.

15. OXALIS FILICAULIS, *Jacq.*

HAB. Cape of Good Hope; with the preceding.

16. OXALIS VERSICOLOR, *Linn.*

HAB. With the three preceding species.

ORD. ZYGOPHYLLACEÆ.

1. TRIBULUS, *Tourn.*

1. TRIBULUS CISTOIDES, *Linn.*

Tribulus cistoides, Linn. Spec. Pl. p. 387; Jacq. Hort. Schœnb. t. 103; Gray, Gen. Am. Bor. Ill. 2, p. 116, t. 145.

HAB. St. Jago, Cape de Verdes. Sandwich Islands, near Honolulu, Oahu. Doubtless introduced from South America.

Endlicher, in his Synopsis Fl. Ins. Austr. (in the Annals of the Vienna Museum), has inadvertently referred this species to Scopoli's genus *Kallstrœmia*, restored by him: but it is a true *Tribulus* having a pentacoccous fruit, as is stated by DeCandolle, on the authority of Kunth. The spines of the fruit vary greatly in size.

2. FAGONIA, *Tourn.*

1. Fagonia aspera, *Gay.*

Fagonia aspera, C. Gay, Fl. Chil. 1, p. 470.

Hab. Peru, in uplands, near Yanga. (A very small, diffuse form, appressed to the ground.)

3. LARREA, *Cav.*

1. Larrea divaricata, *Cav.*

Larrea divaricata, Cav. Ic. Pl. 6, t. 560, f. 1; Hook. & Arn. Bot. Misc. 3, p. 166; Gay, Fl. Chil. 1, p. 473.

Hab. Rio Negro, North Patagonia: where it is a common bush on the sandy plains.

This is the species to which our northern *Larrea Mexicana* is most related. The leaves are by no means villous, as they are described; but the younger ones are more or less silky-pubescent; the older are glabrate.

ORD. RUTACEÆ (DIOSMEÆ, R. Br.).

It is abundantly evident, from the comparison of *Euodia*, *Melicope*, *Acronychia*, &c. with *Zanthoxylum* on the one hand, and with the true *Diosmeæ* on the other, that the characters by which Endlicher distinguished his *Zanthoxyleæ* from his *Diosmeæ* are of no value whatever; and that the view of the family long ago suggested by Brown should be adopted; retaining, however, the name of *Rutaceæ*. Although the Rue and its nearest allies are "not calculated to give a clear idea of the order, from the usual structure and habit of which they deviate in some important points;" yet the name in use for the group cannot now be readily discarded, any more than in the analogous case of the *Euphorbiaceæ*.

1. RUTA, *Linn.*

1. RUTA BRACTEOSA, *DC.*

HAB. Near Valparaiso, Chili. Doubtless introduced from the south of Europe.

2. AGATHOSMA, *Willd.*

1. AGATHOSMA SPICATA, *Licht.*

Agathosma spicata, Licht. in Rœm. & Schult. Syst. Veg. 5, p. 447; DC. Prodr. 1, p. 715, sub *Diosma*.

HAB. Cape of Good Hope, in the immediate vicinity of Cape Town.

3. ACMADENIA, *Bartl. & Wendl.*

1. Acmadenia juniperina, *Bartl. & Wendl.*

Acmadenia juniperina, Bartl. & Wendl. Beitr. Diosm. 1, p. 61.

Hab. Cape of Good Hope; common in the immediate vicinity of Cape Town.

4. DIOSMA, *Berg.*

1. Diosma succulenta, *Willd.*

Hab. Cape of Good Hope; common, with the preceding.

5. COLEONEMA, *Bartl. & Wendl.*

1. Coleonema pulchrum, *Hook.*

Coleonema pulchrum, Hook. Bot. Mag. t. 3340; Eckl. & Zeyh. Enum. p. 106.

Hab. Cape of Good Hope; with the preceding species.

6. CORREA, *Smith.*

1. Correa alba, *Andr.*

Correa alba, Andr. Bot. Rep. t. 18; Vent. Hort. Malm. t. 13; DC. Prodr. 1, p. 719.

Hab. Hunter's River, New South Wales.

2. Correa virens, *Smith.*

Correa virens, Smith, Exot. Bot. 2, p. 25, t. 72; DC. Prodr. 1, p. 719.
C. viridiflora, Andr. Bot. Rep. t. 436.
C. reflexa, Pers. Ench. 1, p. 419; Labill. Fl. Nov. Holl. 2, p. 120.
Mazeutoxeron reflexum, Labill. Voy. a la recherche de La Perouse, 2, p. 66, t. 19.

Hab. New South Wales; with the preceding, and, like it, not in flower.

7. PHILOTHECA, *Rudge.*

1. Philotheca australis, *Rudge.*

Philotheca australis, Rudge, in Linn. Trans. 11, p. 298; DC. Prodr. 1, p. 721.

Hab. New South Wales, in the vicinity of Sydney, and on Hunter's River.

2. Philotheca Reichenbachiana, *Sieber.*

Philotheca Reichenbachiana, Sieber, Pl. Nov. Holl. Exsic. no. 308; Spreng. Syst. Veg. Cur. Post. p. 253; Reichenb. Ic. Bot. Exot. t. 200.

Hab. Sydney, New South Wales.

8. CROWEA, *Smith.*

1. Crowea saligna, *Andr.*

Crowea saligna, Andr. Bot. Rep. t. 79; Vent. Hort. Malm. t. 7; DC. Prodr. 1, p. 720; Reichenb. Fl. Exot. t. 152.

Hab. Sydney, New South Wales.

9. ERIOSTEMON, *Smith.*

1. Eriostemon buxifolium, *Smith.*

Hab. Sydney, New South Wales: nearly the var. α. of De Candolle.

2. Eriostemon verrucosum, *A. Rich.*

Eriostemon verrucosum, A. Rich. Voy. Astrolab. 2, p. 74, t. 26.

Hab. New South Wales; with the preceding.

3. Eriostemon salicifolium, *Smith.*

Hab. New South Wales; with the preceding.

4. Eriostemon cuspidatum, *A. Cunn.*

Eriostemon cuspidatum, A. Cunn. in Hook. Jour. Bot. 1, p. 254; Lodd. Bot. Cab. t. 1247.

Hab. In the vicinity of Sydney, New South Wales.

10. BORONIA, *Smith.*

1. Boronia serrulata, *Smith.*

Hab. In the vicinity of Sydney, New South Wales.

2. Boronia parviflora, *Smith.*

Hab. New South Wales; probably from the vicinity of Sydney.

3. Boronia polygalæfolia, *Smith.*

Hab. In the vicinity of Sydney, New South Wales. (In fruit.)

4. Boronia ledifolia, *Gay.*

Hab. New South Wales; probably from near Sydney.

5. Boronia tetrandra, *Labill.*

Hab. Sydney, New South Wales.

6. Boronia pinnata, *Smith.*

Hab. Sydney, New South Wales.

11. ZIERIA, *Smith.*

1. Zieria lanceolata, *R. Br.*

Hab. Near Sydney, and along Hunter's River, New South Wales.

2. Zieria pauciflora, *Smith.*

Hab. Sydney, and on Hunter's River, New South Wales.

12. PILOCARPUS, *Wahl.*

1. Pilocarpus spicata, *St. Hil.*

Pilocarpus spicata, St. Hil. Hist. Pl. Rem. Bras. t. 16, & Fl. Bras. Mer. 1, p. 83.

Hab. Near Rio Janiero, Brazil. (Imperfect specimens.)

13. EUODIA, *Forst.*

1. Euodia hortensis, *Forst.*

Euodia hortensis, Forst. Char. Gen. p. 14, t. 7; DC. Prodr. 1, p. 724; Adr. Juss. Mem. Rutac. t. 22, f. 28.
Fagara Euodia, Linn. f. Suppl. p. 125; G. Forst. Prodr. Fl. Ins. Austr. p. 10.
Zanthoxylum varians, Benth. in Hook. Lond. Jour. Bot. 2, p. 215.

Hab. Tutuila, one of the Navigators' or Samoan Islands: in cultivated ground. Also at Rewa, Viti-levu, one of the Feejee Islands, in similar situations. (Feejee Islands, Barclay.)—It appears also to have been seen at Tongatabu, where it was found by Forster.

Like the following (of which specimens were also collected by Forster), the leaves are occasionally simple, especially the upper ones. Dr. Pickering, in his manuscript notes, remarks that they are "said to be used for scenting cocoa-nut oil."

2. Euodia longifolia, *A. Rich.*

Euodia longifolia, A. Rich. Bot. Voy. Astrolab. 2, p. 61, t. 22.

Hab. Savaii, Navigators' or Samoan Islands: also Feejee Islands.

The leaves are either simple, trifoliolate, or bifoliolate, elongated-lanceolate or linear, from 6 to 12 inches in length, and half an inch to an inch in width, with undulate margins. The flowers are in long and slender panicles, more simple and slender than those of *E. hortensis,* to which it is closely related.

3. Euodia? drupacea, *Labill.*

Euodia drupacea, Labill. Sert. Austr.-Cal. p. 73, t. 74?

Hab. Muthuata, Feejee Islands.

The specimens as to foliage and inflorescence exactly accord with

Labillardiere's figure; but they bear only half-grown flower-buds, sufficing however to show that the flowers are tetrandrous and apparently perfect. What Labillardiere takes for the putamen of the drupe, is the testa of the seed, as is evident from his figure.—The leaves of our plant are occasionally simple.

14. ACRONYCHIA, *Forst.*

This genus, of which our collection considerably extends the number of the species, differs from *Euodia* in the double number of stamens and the gynobasic disk; from *Melicope* in the valvate æstivation of the corolla; and from both in the complete union of the carpels into a compound ovary, ripening into a drupaceous or fleshy-capsular fruit, which when dehiscent is loculicidal. The flowers are polygamous in all our species, and probably in the whole genus, as in *Euodia*, *Ptelea*, &c.

* *Diversifoliæ.*

1. ACRONYCHIA HETEROPHYLLA, Sp. Nov. (Tab. 32.)

A. glabra; foliis membranaceis amplis, aliis integris aliis trifoliolatis, foliolisque ovalibus oblongisve utrinque acutis; cymis multifloris paniculatis compositis breviter pedunculatis; floribus polygamis, fœmineis stylo gracili, stigmate subquadrilobo, gynophoro cano-pubescente ovario fere æquilongo; fructu subgloboso loculicide quadrivalvi, loculis dispermis.

HAB. Tutuila, one of the Samoan or Navigators' Islands.

Shrub, or small tree, *glabrous* throughout, with much the habit of *Melicope ternata*; but the *leaves* more *ample*, some of them *simple and entire*, while others are *trifoliolate* on the same branches, *membranaceous* in texture, pale and dull, opposite; the simple leaves *oval* or oval-oblong, more or less *acute at both ends*, or sometimes obtuse, loosely feather-veined, thickly punctate with rather opaque dots, 3 to

5 inches in length, 2 inches or more in width, on petioles half an inch or an inch long, which are not perceptibly articulated with the blade: the compound leaves have similar digitate leaflets, only more oblong and commonly larger, from 4 to 7 inches in length, often cuneate-narrowed, or the lateral ones oblique at the base, on partial petioles of 4 to 12 lines long; the common petiole often 3 inches long. Peduncles axillary, sometimes in pairs, shorter than the petiole, bearing a thyrsoid or *paniculate, many-flowered, compound cyme*, which seldom exceeds the petioles. Bracts and bractlets minute. Pedicels fascicled, a line and a half long. *Flowers* diœciously or perhaps monœciously *polygamous;* the male with a small and sterile ovary; the female with short and effete stamens. Flower-buds oblong, about the length of the pedicels. Calyx deeply four-cleft, somewhat glandular; the lobes broadly triangular, imbricated in æstivation, persistent. Corolla thrice the length of the calyx; the petals narrowly oblong, obtuse, with a minute inflexed point, valvate in æstivation, deciduous. Stamens 8, in the male flowers as long as the petals: filaments subulate-filiform, glabrous, somewhat glandular-dotted; the 4 alternate ones rather shorter than the others: anthers oval, cordate, or emarginate at both ends, two-celled. Disk or *gynophore nearly as tall as the ovary* it supports, but narrower, densely *canescent or tomentose.* Ovary (of the fertile flowers) globular, glabrous, four-celled, surmounted by a *slender style*, which is commonly twice or thrice the length of the ovary: *stigma somewhat four-lobed*, thick. The sterile pistil bears a short and more or less rudimentary style and stigma. Ovules 2 in each cell, between amphitropous and anatropous, pendulous; the micropyle superior. *Fruit* capsular, 3 lines in diameter, globular, slightly four-lobed (the carpels united quite to the summit), four-celled, *loculicidally four-valved* from the apex: the chartaceous endocarp separating from the thin exocarp; the *cells two-seeded*, rarely by abortion one-seeded. Seeds hanging by the slender funiculus after escaping from the cell, oval, scarcely 2 lines long, amphitropous, with a small hilum: the testa very black, smooth and shining, somewhat drupaceous, as in *Zanthoxylum.* Embryo as long as the albumen: cotyledons oval, flat: radicle short, slightly bent.

PLATE 32.—ACRONYCHIA DIVERSIFOLIA: a branch, in flower and fruit, of the natural size. Fig. 1. An opening sterile flower. 2. An expanded sterile flower. 3. A posterior, and, 4, anterior view of a

stamen from Fig. 1. 5. Section of a sterile flower, showing the abortive pistil. 6. A fertile flower. 7. Vertical section of the same, showing the gynophore, ovules, &c. 8. Capsule opening. 9. The same, more dehiscent. 10. A seed, with its funiculus. 11. Vertical section of a seed parallel with the cotyledons, showing the whole embryo. 12. Transverse section of a seed.—The details variously magnified.

* * *Simplicifoliæ.*

2. ACRONYCHIA PETIOLARIS, Sp. Nov. (Tab. 33.)

A. glabra; foliis chartaceis oblongis utrinque acutis longe petiolatis; pedunculis brevissimis paucifloris; fructu ovoideo apiculato suberoso-lignescente tomentuloso demum quadrivalvi? basi calyce petalisque persistentibus extus cinereis stipato.

HAB. Muthuata, one of the smaller Feejee Islands.

A tree or shrub (the size unknown), *glabrous* throughout. *Leaves chartaceous* in texture, pellucid-punctate, opposite, *oblong* or elongated-oblong, *acute* or acutish at both ends, entire, or the margins somewhat undulate, 3 to 5 inches long, 1½ to 2 inches wide, bright green and rather shining above, scarcely pale underneath, inconspicuously feather-veined and reticulated, *long-petioled* (the petioles about 1½ inches in length). *Peduncles* axillary, *very short*, 4 or 5 lines long in fruit, apparently simple and very *few-flowered*. Flowers not seen, except the persistent calyx, corolla, and filaments under the base of the fruit, to which they are closely appressed. Both the calyx and corolla are cinereous externally with a close pubescence. The former is four-lobed; the lobes short and obtuse: the latter of 4 oval or oblong petals of thickish texture, 2 lines long, twice the length of the calyx. Persistent filaments 8, flattened, dilated-subulate, ciliate below the middle, occasionally still bearing small two-celled anthers. *Fruit ovoid, slightly pointed*, 6 to 8 lines long, *minutely tomentose* or canescent, four-celled, with either one or two seeds in each cell; the very thick walls between *corky and woody* in texture, but the rind probably fleshy, so as to be more or less drupaceous when fresh: the endocarp chartaceous. In one specimen the apex has separated into four points, so that it is *perhaps four-valved* at complete maturity: if so it would seem to be septicidal. The fruit is closely sessile in the calyx; but its base is marked with the vestige of a very short gynophore, like that of *A. Richii*. Seeds amphitropous, large, when solitary 3 lines long and filling the cell, somewhat club-shaped, the lower, chalazal end being prolonged and tapering; when two in each cell, the upper is ascending and the lower, probably imperfect one, is descending: testa rather drupaceous, with a thin and somewhat dull exterior pellicle, and a very thick and crustaceous inner portion. Nucleus small in proportion to the size of the seed, consisting of a sparing fleshy albumen, and a straight embryo of nearly its length. Cotyledons oblong. Radicle superior.

This is doubtless a true congener of *Acronychia lævis*, Forst., of New Caledonia, and of *A. Endlicheri*, Schott (*Vepris simplicifolia*, Endl.) of Norfolk Island. So far as can be judged from the brief character, the species bears more resemblance to Blume's *A. arborea* than to any other.

Plate 33, *A*.—Acronychia petiolaris: in fruit. Fig. 1. A marcescent persistent flower, taken from the base of a young fruit, enlarged. 2. Fruit, of the natural size, with the persistent remains of the flower at its base. 3. Transverse section of the same. 4. Vertical section of the same. 5. A seed, magnified. 6. Vertical section of the same, showing the embryo, &c.

3. Acronychia Richii, Sp. Nov. (Tab. 33.)

A. glabra; foliis subcoriaceis oblongis seu oblanceolato-oblongis obtusiusculis basi attenuatis; pedunculis brevibus paucifloris; floribus subpolygamis; stylo ovario æquilongo vel breviore; stigmate quadrilobo; gynophoro pubescente; fructu depresso-globuloso loculicide quadrivalvi, loculis monospermis.

Hab. Samoan or Navigators' Islands.

Shrub or tree (the size not recorded), *glabrous*, except a minute pubescence on young shoots and inflorescence. *Leaves rather coriaceous*, opposite, crowded on the branches, varying from *oblong-lanceolate* to *oblong*, *tapering* at the base into a short petiole, *more or less obtuse* at the apex, entire, sparsely feather-veined, dull, inconspicuously but thickly pellucid-punctate, 2 or 2½ inches long, from 7 to 12 lines wide. *Peduncles* axillary, longer or shorter than the petiole, sometimes very short (varying from 2 to 5 lines in length), cymosely *few-flowered*. Pedicels a line long, bracteolate at the base. *Flowers* a line and a half long, *polygamous;* some flowers having large anthers on filaments as long as the petals, and a nearly sessile stigma, while others have a longer style and shorter stamens, with smaller and apparently effete anthers. Calyx puberulent, glandular, four-cleft; the lobes triangular. Petals 4, much longer than the calyx, valvate in æstivation, oblong-lanceolate, with a minute inflexed point, glabrous, spreading, deciduous. Stamens 8: filaments glandular-dotted, either filiform and as long as the petals, and with didymous fertile anthers, or only as long as the ovary, and mostly with effete anthers. Disk or *gynobase pubescent*, four-lobed. Ovary globular, glabrous, four-celled, with 2 amphitropous-ascending ovules in each cell: *style rather short*, *sometimes* as long as the ovary, in some truly fertile flowers considerably shorter, terminated by a thickened *four-lobed stigma*. The staminate flowers examined have a similar, although smaller ovary, which contains one or two apparently well-formed ovules in each cell, and is terminated by a small, four-lobed stigma. *Fruit globular, depressed*, not in the least pointed, but rather umbilicate at the summit (the style wholly deciduous), 2 lines in diameter, four-celled, four-seeded (or by abortion two-seeded), *loculicidally four-valved* from the summit: exocarp rather thin, coriaceous, and glandular, as in *Zanthoxylum:* endocarp thin, chartaceous. *Seed solitary* in each cell, ovoid, with a crustaceous, black and shining testa, and a linear lateral hilum; the micropyle superior. Embryo straight, in the axis of fleshy albumen: cotyledons oval, flat: radicle very short.

PLATE 33, *B.*—ACRONYCHIA RICHII. Fig. 1. Branchlet of a fertile plant, in flower. 2. Branchlet, in fruit. 3. Bud of a sterile? flower. 4. A petal, from the same. 5. The same, with the petals removed. 6. Vertical section through the ovary of the same. 7. Fertile flower, from which the petals, &c., have fallen. 8. Vertical section of a similar flower, showing also two of the sterile? stamens. 9. A fruit, with the sutures opening. 10. Vertical section of the same, and of one of the seeds, showing the embryo. 11. A seed detached.—All the analyses more or less magnified.

4. ACRONYCHIA RETUSA, Sp. Nov. (Tab. 34.)

A. *subglabra; foliis membranaceis obovatis ovalibusve retusis basi subacutis; pedunculis petiolo vix longioribus; cymis plurifloris; floribus polygamis; stigmate peltato-quadrilobo subsessili.*

HAB. Samoan or Navigators' Islands.

A shrub or tree (the size not recorded), *glabrous*, except a slight pubescence on the young shoots, &c. *Leaves thin and membranaceous*, opposite, from 2 to 3½ inches long, *obovate* or *oval*, *with a more or less acute base*, *retuse* at the apex, entire, or obscurely undulate, sparingly feather-veined, pale green and dull, nearly of the same hue both sides, thickly punctate with pellucid dots; the base obscurely articulated with the apex of the petiole, which is from 5 to 8 lines long. *Peduncles* axillary, equalling or *slightly exceeding the petioles* in length, bearing *rather numerous flowers* in a small *cyme*. Bracts and bractlets minute, subulate. Pedicels only a line long. *Flowers* diœciously *polygamous;* the male (with very small flower-buds) having a sterile ovary, with an effete and less thickened stigma; the female (flower-buds a line and a half long) having effete anthers: otherwise nearly similar. Calyx glandular-dotted, four-cleft to the middle; the short lobes ovate and obtuse, or in the male flowers acutish. Petals 4, white or whitish, valvate in æstivation, with a minute inflexed point at the apex, ovate-oblong, glandular-dotted, glabrous or nearly so. Stamens 8: filaments short, the alternate ones shorter, glabrous but obscurely glandular, sparingly ciliate towards the base: anthers cordate-didymous. Ovary ovoid, obscurely pubescent, at length covered with pulverulent glands, raised on a short and thick disk or gynobase, four-celled, crowned with a large and purple, somewhat *peltate and four-lobed, subsessile stigma.* Ovules 2 in each cell, amphitropous, ascending. Fruit unknown.

This species is evidently a congener of *Acronychia Endlicheri*, Schott (the *Vepris simplicifolia* of Endlicher), and doubtless also of the original *A. lævis*, notwithstanding the want of a style.

PLATE 34, *A*.—ACRONYCHIA RETUSA. Fig. 1. Branchlet of the sterile plant, with flower-buds. 2. Branchlet of the fertile plant. 3. Sterile flower-bud and pedicel. 4. Vertical section of the same. 5. A petal, from the same. 6. Stamens, from the same. 7. Sterile pistil. 8. Transverse section of the same. 9. Stamens and pistil of a fertile flower (from Fig. 2). 10. Vertical section of the same.—The analyses variously magnified.

15. PELEA, Nov. Gen.

Flores polygami. Calyx quadripartitus, æstivatione imbricatus, cito deciduus. Petala 4, æstivatione valvata, mox decidua. Stamina 8: filamenta subulata vel complanata, fl. fert. breviora sæpiusque antheris (sagittatis) cassis donata. Discus hypogynus brevissimus, integer, seu octocrenulatus. Ovarium quadriloculare (loculis petalis oppositis), quadrilobum, sæpius umbilicatum: stylus centralis: stigma quadrilobum. Ovula in loculis gemina, hemitropa, adscendentia. Capsula quadripartita, stellariformis (coccis divaricatis), loculicida; endocarpio chartaceo ab exocarpio coriaceo seu lignescente solubili. Semina in loculis sæpissime bina, ovoidea, testa nitente drupacea. Embryo intra albumen carnosum rectus; cotyledonibus ovalibus; radicula supera.—Arbores Sandwicenses (necnon Samoenses), inermes, odoratæ; foliis simplicibus integerrimis oppositis seu verticillatis coriaceis punctatis venosissimis, venis in venulam intramarginalem pl. m. confluentibus; floribus axillaribus.

A genus of several species of trees, natives of the Sandwich Islands, one of which has been inadvertently taken for a *Clusia*, while another, known many years since by the fruit alone, was referred by Adrien de Jussieu and Gaudichaud to the South American genus *Brunellia*, Ruiz & Pav. But all the species of that obscure genus are apetalous, and have a persistent calyx, with a valvate æstivation, as well as perfectly distinct pistils, with subulate styles. Their leaves also are said not to be punctate, and to be furnished with small stipules, of which there is no trace in our plants. The true affinity of our genus is manifestly with *Acronychia* and *Melicope;* from both of which it differs in habit, in the deciduous calyx, &c.; from the former likewise in the deeply four-lobed ovary and fruit; from the latter in the valvate æstivation of the corolla, and in the union of the carpels by their bases to a greater or less extent. The last-named character, however, may be invalidated by an ambiguous species from the Samoan Islands, which I am obliged for the present to append to this genus, since the valvate æstivation of the corolla excludes it from *Melicope*, and the separation of the ovaries, from *Acronychia*.*

As this is a characteristic and important genus of the Hawaiian Islands, and especially of the forest-clad sides of the volcanoes of her fabled abode, I dedicate it to the Hawaiian goddess *Pele.*

* *Species Sandwicenses, veræ.*

1. PELEA CLUSIÆFOLIA. (Tab. 35.)

P. glaberrima; foliis ter–quaternatim verticillatis vel oppositis obovatis

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* The diagnoses of these allied genora may be expressed as follows:—

1. *Æstivatio corollæ valvaris. Flores polygami.*

1. EUODIA. Stamina 4. Ovaria 4, discreta, stylis tantum connexa, in disco urceolari inclusa. Folliculi bivalves.

2. ACRONYCHIA. Stamina 8. Ovaria in unicum quadriloculare omnino coalita. Fructus aut indehiscens, aut loculicide quadrivalvis.

3. PELEA. Stamina 8. Ovaria in unicum quadrilobum coalita. Capsula quadripartita, stellata, tetracocca.

2. *Æstivatio corollæ imbricativa. Ovaria discreta.*

4. MELICOPE. Flores hermaphroditi.(?) Stamina 8. Ovaria 4, stylis coalita, disco brevissimo insidentia. Cocci 4, bivalves.

5. PITAVIA. Flores polygamo-dioici. Stamina 8. Ovaria 4, gynophoro satis elongato insidentia. Styli superne coaliti. Baccæ indehiscens.

6. ZANTHOXYLUM. Flores dioici. Stamina 3–5. Ovaria 1–5, gynophoro brevi insidentia. Folliculi carnosi semibivalves.

petiolatis; floribus in axillis fasciculatis, brevissime pedicellatis; calycis lobis ovatis membranaceis petalis plus dimidio brevioribus; stylo ovario glabro longiore; capsula obtuse quadriloba.

Clusia sessilis, Hook. & Arn. Bot. Beech. Voy. p. 80, non Forst.

Var. *β. capsula multum majore, valvis crassis lignescentibus.* (Tab. 34, fig. 10.)

Var. *γ. foliis tenuioribus cuneato-oblanceolatis; capsula parvula.*

Hab. Sandwich Islands: mountains behind Honolulu, Oahu (where it was also gathered by Macrae, Lay and Collie, Gaudichaud, &c.): Hawaii, in the district of Puna, and on the margins of the Bullock Plains on Mouna Kea. Var. *β.* Kaala Mountains, Oahu. Var. *γ.* Mouna Kea, Hawaii.

Tree about 25 feet high, *very glabrous*, except the nascent leaves in the naked leaf-buds. *Leaves verticillate in fours, or sometimes in threes*, or simply opposite, especially the lower ones, *coriaceous, obovate* or obovate-oblong, obtuse or retuse, more or less acute at the base, entire, pale, with the strong midrib rather dark underneath, either dull or rather shining, *punctate*, but the dots seldom translucent, on account of the thickness and opacity of the full-grown leaf, closely and copiously feather-veined; the primary veins parallel and somewhat transverse, reticulated with intermediate veinlets, and at their extremity *confluent into a distinct intramarginal vein:* they are crowded on the branches, from 2 to 3 inches long, 8 to 20 lines wide, distinctly *petioled;* the petioles varying from two lines to an inch in length. Their texture and ordinary hue in the dried specimens, as well as the numerous straight and parallel veins, give the foliage slightly the appearance of that of a *Clusia. Flowers in axillary subsessile clusters*, or sessile cymules; the *very short pedicels* becoming 2 to 4 lines long in fruit, naked. *Calyx four-parted; the lobes ovate, membranaceous*, of nearly the same yellowish hue as the corolla, obtuse, *imbricated in æstivation*, scarcely a line and a half long, deciduous. *Petals* 4, *valvate* in æstivation, with an inflexed small appendage at the thickened apex, in the manner of *Acronychia*, ovate in the bud, becoming ovate-lanceolate and fully 3 lines in length, honey-yellow or wax-coloured, thickish, glandular-dotted, *deciduous.* I have seen only fertile flowers, which appear as if hermaphrodite; but the anthers contain no good pollen. *Stamens* 8, shorter than the petals: *filaments dilated*, linear-lanceolate, glabrous: anthers sagittate, mucronate, adnate-introrse. *Hypogynous disk* gynobasic, *very short*, annular, entire. *Ovary glabrous*, depressed-globular, *four-lobed, four-celled*, the four carpels united to the umbilicate apex; which bears a columnar *central style* that *exceeds the ovary* in length: *stigmas* 4, *thick* and short. *Ovules* 2 in each cell, probably collateral at an early period, *ascending, hemitropous;* the micropyle superior. *Capsule* tetracoccous, rather deeply *four-lobed*, with the *lobes obtuse* and rounded, *diverging* so as to be *star-shaped*, half an inch or rather more in diameter, *loculicidal*, so that the cocci become two-valved; the *exocarp thick and coriaceous* when dry, somewhat wrinkled or reticulated; the thin and *papery endocarp separating* after dehiscence, glabrous within. *Seeds* 2 *in each cell*, or sometimes by abortion solitary, black and shining like those of *Zanthoxylum*, ovoid, 1½ to 2 lines long; the *integument drupaceous;* the exterior pellicle being thin and fragile, and connected by a sparing dry pulp with the inner very thick and crustaceous portion: hilum ventral, linear. *Embryo straight*, nearly as long as the *fleshy albumen: cotyledons oval*, flat: *radicle superior*, slender.

The variety β., of which there is only an imperfect specimen, with ripe fruit, appears to differ merely in the *much larger capsule* (an inch in diameter), with very *thick and lignescent* walls.

The variety γ., from Mouna Kea, is distinguished from the other Hawaiian specimens (of which the foliage is mostly greener than in those from Oahu) only by the *longer and narrower leaves* (3 or 4 inches in length), with a more *tapering base*, and of thinner texture. It probably grew in a closer forest.

All the specimens I have seen are in fruit, save one from Macrae's collection; from which the (fertile) flowers are here described and illustrated.

PLATE 35.—PELEA CLUSIÆFOLIA: in flower and in fruit. Fig. 1. A flower-bud. 2. A petal, from the same, seen from within. 3. A stamen, from the same, seen from within. 4. An expanded (fertile) flower. 5. Vertical section of the same, showing the ovules, &c. 6. Pistil, showing the disk, &c. 7. A seed. 8. Vertical section of the same. 9. Embryo, detached.—The analyses all variously magnified.

2. Pelea auriculæfolia, Sp. Nov. (Tab. 36.)

P. glabra; foliis ternis oblongo-spathulatis basi auriculatis sessilibus; floribus fasciculatis ad axillas foliorum delapsorum secus caulem virgatum brevissime pedicellatis; capsula quadripartita.

Hab. Forests of Hawaii, on the flank of Mouna Kea.

The specimen, taken from "an upright, nearly simple shrub," bears only a little fruit, and a few fertile ovaries, from which the perianth, stamens, &c., have fallen. The virgate stem is very leafy above; and the flowers have been produced lower down, in small *fascicles*, from the axils of earlier leaves, now fallen. Plant *glabrous* throughout. *Leaves verticillate in threes*, coriaceous, pale, *oblong-spatulate*, obtuse, *auriculate at the base*, *sessile*, from 3 to 5 inches long, veined and dotted nearly as in the preceding species; the midrib salient underneath. Ovary more deeply lobed than in *P. clusiæfolia*, being united only at the base: the style has mostly fallen. *Capsule deeply four-parted;* the cocci oval-oblong, otherwise similar, as apparently are the seeds, to those of the foregoing species.

Plate 36.—Pelea auriculæfolia: of the natural size. Fig. 1. Ovary, with the receptacle, &c., magnified. 2. Vertical section of the same, more magnified, showing the ovules, &c.

3. Pelea oblongifolia, Sp. Nov.

P. glabra; foliis oppositis oblongis seu ovalibus petiolatis; pedunculis (fl. fert.) in axillis solitariis uni–bifloris petiolum adæquantibus; capsula quadriloba, coccis subcarinatis.

Hab. Hawaii, in the district of Puna, at an elevation of 800 or 1,000 feet; near the crater Lua Pele: also in the forest on the margin of Bullock Plains, Mouna Kea. Kauai? (foliage only). Mountains behind Honolulu, Oahu.

To this species I refer a number of individuals from different habitats, none of them with flowers, and few with mature fruit.

Some of them approach *P. Sandwicensis* in appearance, but are *glabrous* (the nascent foliage only minutely pubescent), the (fertile) *peduncles* are *one-flowered, or rarely two-flowered;* the glabrous *cocci* appear to be *more or less carinate at the sutures*, and their endocarp is glabrous inside. *Leaves simply opposite* in all the specimens, *oblong*, or occasionally *oval*, sometimes rather contracted towards the base, more commonly obtuse or even retuse at both ends, coriaceous or chartaceo-coriaceous in texture, somewhat shining, and of the same green hue both sides, punctate, copiously and rather conspicuously feather-veined, but minutely reticulated; the primary veins almost transverse, more or less confluent into a submarginal vein: they vary from 2 to 4 inches in length; their petioles are commonly half or three-quarters of an inch long. *Peduncles* (of the fertile flowers only seen) *solitary in the axils* of the leaves, usually equalling the petioles, sometimes longer, bearing one or two pairs of small subulate bracts. Fertilized ovary glabrous, four-lobed, girt at the base by an eight-crenulate disk. Style not seen. *Capsule deeply four-lobed*, an inch or two-thirds of an inch in diameter; the cocci transversely oblong and divaricate, or in some specimens decurved, so that the vertical section would be kidney-shaped: in these the carpels appear to be more united, and their long diameter is vertical. Seed-coat drupaceous, shining.

4. PELEA ROTUNDIFOLIA, Sp. Nov. (Tab. 37.)

P. glabra; foliis orbiculatis sessilibus valde reticulatis; floribus cymulosis; calycis lobis ovatis petala subæquantibus; stylo ovario puberulo breviore.

HAB. Oahu, on mountains behind Honolulu.

Only a single specimen of this well-marked species occurs in the collection; and that bears a cluster of unexpanded, apparently hermaphrodite flowers. *Leaves orbicular* or nearly so, about 2½ inches in length and breadth, *sessile*, coriaceous, rather shining, and of the same hue both sides, *very veiny and reticulated*, especially underneath, *glabrous*, rather obscurely punctate. *Flowers* several, in a small and short-peduncled, somewhat racemose *cyme* in the axils of the uppermost leaves. Bracts and bractlets opposite, minute, ovate-subulate, puberulent. Pedicels rather longer than the flower buds, which are only a line and a half in length. Calyx deeply four-cleft, imbricated in æstivation; the *ovate lobes nearly equalling the petals* when they first open. The latter are triangular-ovate, valvate in æstivation, with an inflexed tip. Stamens 8: filaments subulate, thick, not longer than the ovary: anthers sagittate, mucronulate, introrsely adnate; the connective, especially of the alternate stamens, glandular-dotted. Hypogynous disk small, annular, eight-crenulate. Ovary puberulent, subglobose, of 4 carpels, which are united at the base, and also by the *short style:* stigmas 4, capitate. Ovules 2 in each cell, hemitropous, ascending, or the upper one nearly centripetal. Fruit unknown.

PLATE 37, *A.*—PELEA ROTUNDIFOLIA: summit of a flowering branch. Fig. 1. A flower-bud, with its bracteolate pedicel. 2. The flower, opened. 3. A stamen, seen externally. 4. The same, seen from within. 5. Pistil, with its disk. 6. Vertical section of the same.—All the analyses more or less magnified.

5. PELEA SANDWICENSIS. (Tab. 37.)

P. ramis novellis cum inflorescentia cymosa 3–9-flora hirsutulo-tomentosis; foliis oppositis ovalibus oblongisve supra glaberrimis subtus præsertim valde reticulatis petiolatis; calycis lobis ovato-rotundis petalis dimidio brevioribus; stylo fl. fert. ovario longiore; capsula profunde quadriloba tomentulosa, coccis ovalibus haud carinatis, endocarpio intus puberulo!

Brunellia Sandwicensis, Gaud. Bot. Freyc. Voy. p. 93, sine descr.; Hook. & Arn. Bot. Beech. Voy. p. 80.

HAB. Mountains behind Honolulu, Oahu (where it was also gathered by Gaudichaud, Macrae, Lay and Collie). Mountains of the western part of Maui.

The specimens in the collection being very imperfect ones and without ripe fruit, our principal figure and character are taken from a specimen of the fertile plant, gathered by Mr. Macrae. The species is apparently a tree, of considerable size, glabrous at maturity, or nearly so; but the *new branchlets, inflorescence, &c., tomentose* with a rather *hirsute* pubescence. *Leaves opposite, oval or oblong,* 2½ to 4½ inches long by 1½ to 2½ in width, thick and coriaceous, *very glabrous above,* more or less puberulent or glabrate beneath, and when young pubescent on the salient and thick midrib, very veiny and reticulated, the *reticulations especially conspicuous underneath,* punctate; the stout and lignescent petioles 7 to 14 lines long. *Cymes* axillary, short-peduncled, 3–9-*flowered:* pedicels short, annulate by the broad scars of the ovate-subulate bracts. Flowers a line and a half long. *Calyx-lobes round-ovate,* half the length of the petals. Stamens in the male flowers nearly as long as the petals, with sagittate anthers; in the fertile flowers examined, with shorter filaments and rather smaller anthers. Disk crenulately eight-lobed, nearly glabrous. Style in the fertile flowers slender, longer than the tomentose and deeply four-lobed ovary, early deciduous; in the sterile flowers shorter than the ovary, which is similar but smaller: stigma four-lobed. Ovules, &c., as in the other species. *Capsule finely tomentose,* even at maturity scarcely above half an inch in diameter, *deeply* four-lobed, star-shaped; the cocci oval, not flattened laterally nor with sharp or carinate sutures, The papery *endocarp is finely pubescent* inside, as was noticed by Adrien de Jussieu, in his Memoir on *Rutaceæ.*

PLATE 37, *B.*—PELEA SANDWICENSIS: summit of a fruiting branch, of the natural size. Fig. 1. A hermaphrodite-sterile flower. 2. A hermaphrodite-fertile flower. 3. Vertical section of a capsule.—The details enlarged.

6. PELEA VOLCANICA, Sp. Nov. (Tab. 38.)

P. ramis junioribus petiolis et inflorescentia cymuloso-paniculata hirsuto-tomentosis; foliis oppositis ovalibus longe petiolatis majusculis glabratis; calycis lobis ovatis petalis plus dimidio brevioribus; stylo gracili ovario tomentoso æquilongo; capsula (sesquipollicari) glabra quadriloba, coccis recurvis carinatis.

HAB. In forests, on Mouna Kea, near the Bullock Plains, &c., Hawaii.

"A tree, 40 feet high; the trunk a foot and a half in diameter:" *young branches with the petioles, &c., tomentose with a hirsute pubescence*, which disappears with age. *Leaves opposite, oval*, 4 to 6 inches long and 2 to 3½ wide, mostly obtuse at both ends, coriaceous, but not so thick nor so strikingly reticulated as in the foregoing species, glabrous above, *glabrate* beneath, the strong and salient midrib more or less pubescent, punctate with more or less translucent dots, not shining: the *petioles long* (1½ to 2 inches) and stout, apparently lignescent. Peduncles axillary and solitary, half an inch to an inch and a half long, tomentose-pubescent, branching into a trichotomous, loosely *several-flowered, paniculate cyme*. Bracts subulate, caducous. Pedicels stout, a line or two in length. The apparently hermaphrodite flowers only are known. Lobes of the calyx ovate, mucronulate, canescently pubescent, imbricated in æstivation, early caducous, as in the preceding species, less than half the length of the ovate-lanceolate petals. The latter are about 3 lines long, glabrous, valvate in æstivation, early deciduous. Stamens 8, nearly as long as the petals, or in some flowers shorter (and imperfect?): filaments subulate: anthers oblong, retuse, introrse. Disk short and thick, somewhat crenulate, minutely tomentose. *Ovary tomentose*, four-lobed from the summit, four-celled, its umbilicate apex bearing a *slender style as long as the ovary* itself, from which it early falls away entire. Stigma four-lobed; the lobes oblong. In our fruiting specimen only one fruit matures on each cyme, which therefore appears as if borne on a simple and articulated axillary peduncle. *Capsule* larger than in any other known species, being *an inch and a half in diameter* when fully formed; but one or two, and sometimes three of the lobes or cocci are often abortive or infertile: *cocci glabrous*, somewhat lignescent, united in the axis, but *recurved*, so that a vertical section would be kidney-shaped, more or less flattened laterally, acute or *carinate* at the sutures; the papery endocarp glabrous inside. Seed ovoid, with a black and shining, drupaceous testa. Embryo nearly the length and breadth of the albumen. Cotyledons oval: radicle very short, superior.

Of most of the species of this genus here characterized complete materials are still needed. There are indications of still others in the Sandwich Islands, unless these plants vary greatly in their forms, which (as is justly remarked by Bory and Dr. Hooker), is apt to be the case in insular floras.

Plate 38.—Pelea volcanica: branches, of the natural size, in flower and in fruit. Fig. 1. Diagram of the flower. 2. Expanded hermaphrodite flower. 3. Vertical section of the same. 4. A stamen. 5. Fructified ovary, with the disk, pedicel, and bractlets. 6. Vertical section of the seed through the hilum.—The details variously magnified.

* * *Species Samoensis, dubia.*

7. Pelea ? lucida, Sp. Nov. (Tab. 34.)

P.? glaberrima; foliis oppositis ovalibus seu ovali-oblongis subcoriaceis supra lucidis creberrime penninerviis; cymis longe pedunculatis multifloris; ovariis fere discretis stylo connexis.

Hab. Mountains of Tutuila, one of the Samoan or Navigators' Islands.

A shrub or tree, *glabrous* throughout. *Leaves opposite*, approximate, *oval* and slightly pointed in the male specimen, *oval-oblong* and more *acuminate* in the female specimen, obtuse or acutish at the base, entire, 3 or 4 inches long, about 2 inches wide, *rather coriaceous* in texture, bright green and *shining above*, slightly pale underneath, thickly pellucid-punctate; the strong midrib sending off along its whole length a great number of transverse and *close, pinnate veins*, which are very conspicuous on the upper surface, reticulated towards the margins. Petioles about half an inch long. *Peduncles elongated*, one or two inches in length, bearing a small, *loosely flowered cyme* or panicle. Bracts and bractlets minute, subulate. Pedicels 1½ to 2 lines long, fascicled, articulated. Flowers diœciously polygamous; the male having a sterile gynæcium; the female more or less effete anthers. Calyx sprinkled with glands, deeply four-cleft, deciduous; the lobes ovate, obtuse, imbricated in æstivation. Petals 4, deciduous, valvate in æstivation, lanceolate-oblong, or ovate-oblong in the male flowers, acutish, with a minute inflexed point, glandular and dotted. Stamens 8, shorter than the petals, the alternate ones still shorter: filaments glabrous, glandular; in the effete stamens of the fertile flowers slightly ciliate. *Ovaries* 4, glabrous, glandular, supported on a small and short, somewhat eight-lobed, gynobasic disk, closely connivent, as if forming a four-lobed compound ovary, but *distinct;* their styles united into one, but at length separable? Stigma four-lobed. The styles are either longer or shorter than the ovary, even in different flowers of the same cyme. Ovules geminate from near the base of the cell, ascending, the micropyle superior. Ovary of the male flowers four-lobed, crowned with a small sessile stigma, and containing only abortive ovules. Fruit not seen.

We have only imperfect and scanty materials for characterizing this plant, the genus of which must for the present remain uncertain. Apparently it differs from *Melicope* only in the valvate æstivation of the corolla and the deciduous calyx, and from *Acronychia* in the uncombined ovaries. Since it is nearly in these same particulars that *Pelea* is distinguished from these two genera, the plant may most naturally be referred to the present genus, with which it pretty well accords in habit.

PLATE 34, *B.*—PELEA? LUCIDA. Fig. 1. Branch of the sterile plant. 2. Portion of a branch of the fertile plant. 3. Flower-bud and pedicel of the sterile plant. 4. Expanded flower of the same. 5. Calyx and abortive pistil of the same. 6. Flower-bud, with the lobes of the calyx and petals removed. 7. Stamens of the same. 8. A fertile flower (from fig. 2). 9. Vertical section of the same. 10. The pistil shortly after anthesis; the ovaries connected only by their common style.—The details variously magnified.

16. MELICOPE, *Forst.*

The æstivation of the corolla appears not to have been determined either in *Melicope ternata* or *M. simplex*. Some flower-buds of the two species, kindly communicated by Sir William Hooker for the purpose, enable me to state that the *æstivation is imbricative*. In *M. ternata* the thin edges of the petals slightly but distinctly overlap: in *M. simplex* they are more strongly imbricated. There are some indications that the flowers are polygamous, rather than truly hermaphrodite. The testa of the seed is not "coriaceous," but *crustaceous;* and the radicle of the embryo is superior, as in all the allied genera.

I refer to this genus, with some confidence, several simple-leaved Sandwich Island species, of which our materials are very imperfect. Two are in fruit; of two others only a flower or two is known; and the specimens of probably a fifth species afford neither flowers nor fruit.

* *Novo-Zelandicæ.*

1. MELICOPE TERNATA, *Forst.*

Melicope ternata, Forst. Char. Gen. t. 28, & Prodr. Fl. Ins. Austr. p. 166; DC. Prodr. 1, p. 723; A. Rich. Voy. Astrolab. 1, p. 293; A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 315; Hook. Ic. Pl. t. 603; Hook. f. Fl. N. Zeal. p. 43.
Entoganum lævigatum, Banks & Soland. in Herb. Banks; Gærtn. Fruct. 1, p. 331, t. 68.

HAB. Tippona, New Zealand. (In fruit only.)

* * *Sandwicenses; foliis simplicibus integerrimis, petiolis anguste marginatis.*

2. MELICOPE CINEREA, Sp. Nov. (Tab. 39.)

M. foliis lanceolato-oblongis basi rotundato-retusis pallidis utrinque subtus præsertim ramulisque junioribus puberulo-tomentellis; pedunculis axillaribus paucifloris; floribus subracemosis extus canescentibus.

HAB. Oahu; district of Waianae; in a ravine of the Kaala Mountains.

The specimens, apparently of an arborescent plant (the size not recorded), were just developing the inflorescence, and furnished only two well-formed (apparently hermaphrodite) flower-buds for examination. Branches glabrous, marked with strong approximate leaf-scars; the *younger shoots canescent* with a fine and soft tomentum. *Leaves* opposite, petioled, *narrowly oblong, entire*, more or less obtuse, *the rounded base retuse*, coriaceous in texture, but rather thin, whitish or *pale, puberulent with a fine and soft tomentum* when young, of which the closer portion is persistent on the lower surface, the upper glabrate, pellucid-punctate, pinnately veined, with the veinlets slightly reticulated, 4 or 5 inches long, 14 to 20 lines broad, not articulated with the *petiole;* which is 9 or 10 lines long, narrowly channeled above, and with the sides sharply but *narrowly margined. Peduncles axillary,* solitary, short, the inflorescence as far as developed not longer than the petiole, canescent, bearing pairs of opposite, oblong-ovate, small bracts, from the axils of which are short pedicels (making a short *raceme*) or perhaps branches, developing several flowers. Calyx four-parted; the ovate *sepals, like the petals, canescent externally,* glabrous within, imbricated in æstivation. Petals 4, ovate, a little longer than the calyx, 2 lines in length, thickish, imbricated in æstivation, the narrow and thin edges overlapping. Stamens 8, shorter than the petals: filaments thickish, subulate, glandular-dotted on the back; the four opposite the sepals longer than the others: anthers oblong, emarginate at both ends, two-celled, incumbent. Hypogynous disk crateriform, eight-lobed, the lobes alternate with the stamens. The gynæcium appears at first view to consist of a four-lobed and four-celled umbilicate ovary, but on examination it is found that the four rounded ovaries are connected only by means of the short style. Stigmas 4, capitate. Ovules geminate, superposed, hemitropous; the micropyle superior. Fruit wholly unknown.

PLATE 39, *A*.—MELICOPE CINEREA: a branch, of the natural size. Fig. 1. A flower-bud. 2. Transverse section of the same (diagram). 3. Vertical section through the ovaries, &c. 4. Pistil, with the hypogynous disk.—All the details magnified.

3. MELICOPE BARBIGERA, Sp. Nov. (Tab. 39.)

M. foliis oblongis utrinque obtusis, adultis viridibus supra glabris subtus secus costam villoso-barbatis; pedunculis axillaribus uni-trifloris petiolo brevioribus; folliculis lenticulari-ovoideis.

HAB. On the mountains of Kauai, Sandwich Islands.

The specimens, apparently of an arborescent plant, are in fruit, and with some forming inflorescence; but there are no flower-buds sufficiently developed for examination. Manifestly it is a species nearly related to the preceding, of which we possess the flowers alone, while these are wanting in this. The young branchlets, the nascent foliage, and the inflorescence are similarly cinereous-canescent: but the adult *leaves* (*oblong and obtuse at both ends*) are *green* both sides, wholly glabrous above, and *beneath densely villous-bearded* with very long hairs *along the midrib*, with some scattered and more deciduous ones over the lower surface. They are coriaceous, but thin, pellucid-punctate, the dots black by reflected light: in the specimens they are all curved; the upper surface convex, the lower concave. *Petioles* about an inch long, similarly margined, *longer than the fruiting peduncle*, which appears to have been 1–3-*flowered* at the apex. In one instance a partly persistent calyx is seen; the sepals ovate, obtuse, canescent externally. The vestiges of the hypogynous disk and of barren ovaries accord with those of the preceding species. The fruit consists of 4, or by abortion fewer, dry, glabrous, coriaceous, somewhat veiny and glandular, *lenticular-ovoid follicles*, which are divaricate, sessile, half an inch in length, dehiscent down the inner suture, at length perhaps two-valved, containing one or two black seeds, which resemble those of *M. ternata*.

PLATE 39, *B.*—MELICOPE BARBIGERA: a branch, in fruit, of the natural size. Fig. 5. Section of a carpel and seed. 6. A seed.—Both enlarged.

4. MELICOPE SPATHULATA, Sp. Nov.

M. glabra; foliis elongatis spathulato-oblongis seu oblanceolatis obtusis basi acutis; pedunculis axillaribus bi–trifloris; sepalis petalisque glabris orbiculatis.

HAB. On the mountains of Kauai, Sandwich Islands.

The single specimen of this species, bearing two flower-buds only, belongs to an apparently sarmentose shrub. There is, however, no record of the size or habit of the plant. The slender branch is compressed-angled, *glabrous*, as is the foliage, &c. *Leaves* opposite, coriaceous, *elongated* (from 3 to 6 inches long, and one or two broad), *spatulate-oblong*, or the smaller ones *oblanceolate, obtuse*, entire, tapering to an *acute base*, pale green and rather dull both sides, inconspicuously feather-veined, pellucid-punctate, the copious dots black by reflected light: petiole 6 to 8 lines long, slightly margined. From one axil, in the specimen, proceeds a short bibracteate peduncle, only 2 lines long, when it is trichotomous; the one-flowered pedicels 3 or 4 lines long, bibracteolate in the middle. Flower-bud 3 lines long, globular; the calyx rather longer than the still undeveloped corolla: *sepals glabrous, orbicular,* thickish, with very thin margins, strongly imbricated in æstivation, slightly ciliate, doubtless persistent. *Petals* in the not full-grown bud, *orbicular,* glabrous, strongly imbricated in æstivation; their minute apexes however are inflexed and more or less complicated together, or coherent. Stamens 8, short: anthers adnate, introrse; the connective glandular on the back. Ovaries apparently distinct or nearly so, glabrous.

5. Melicope? elliptica, Sp. Nov.

M. glabra; foliis ellipticis utrinque obtusis coriaceis subtus grosse reticulatis; pedunculis brevissimis axillaribus; folliculis ovoideis cum calyce persistente tomentulosis.

Hab. Kaala Mountains; in the district of Waianae, Oahu.

The specimens are two small branches of an apparently arborescent plant, in fruit, and with mere vestiges of flowers. *Leaves* opposite, *glabrous,* as is the stem, &c., *elliptical, obtuse at both ends,* about 2 inches long and little over an inch wide, *coriaceous,* with somewhat revolute entire margins, punctate, feather-veined, sparingly and *coarsely reticulated,* especially *underneath;* the petioles 3 or 4 lines long, slightly margined. *Peduncles very short,* either solitary in the axils and 1–3-flowered, or somewhat fascicled. *Calyx tomentulose;* the sepals broadly ovate, coriaceous, with thin margins, *persistent* at the base of the fruit, to which they are appressed. The vestiges of petals seen in the remains of a single flower are oblong, canescent externally, longer than the calyx. Style rather shorter than the globular distinct ovaries, villous below, deciduous: stigma four-lobed. *Follicles ovoid, cinereous-tomentose,* 5 lines long, turgid, coriaceous, at length two-valved or nearly so: the separable papery endocarp glabrous within. Seeds as in the genus.

The carpels of this ambiguous and doubtful species resemble those of *Pelea Sandwicensis;* but the endocarp is smooth within; and the calyx is perfectly persistent, while in the plant above mentioned it is very deciduous. The æstivation of the corolla is requisite for the determination of the genus. The withered petals examined appeared to have their edges thin towards the base, but thicker and abrupt near the apex.

6. MELICOPE? GRANDIFOLIA, Sp. Nov.

M. glabella; foliis magnis obovato-lanceolatis seu spathulato-oblongis membranaceis basi attenuatis subtus pl. m. pubescentibus.

HAB. In forests of Mouna Kea, Hawaii.

Only leafy shoots occur in the collection, gathered, according to Dr. Pickering's notes, from "a tree 20 feet high, with the trunk 8 or 10 inches in diameter at the base." The still young and *membranaceous leaves* are from 8 to 12 inches long, 2 or 3 inches wide above the middle, *obovate-lanceolate or spatulate-oblong, tapering into a short petiole*, sparsely veiny, thickly pellucid-punctate, glabrous or glabrate above, mostly *pubescent underneath* with rather sparse hairs. Neither flowers nor fruit occur in the collection. The fruit is said to be "solitary and axillary."

17. ZANTHOXYLUM, *Colden.*

1. ZANTHOXYLUM KAUAENSE, Sp. Nov.

Z. inerme, glabrum; foliis alternis pinnatis 3–5-foliolatis; foliolis coriaceis ovalibus integerrimis haud punctatis; paniculis axillaribus compositis; fructibus stipitatis.

HAB. On the mountains of Kauai, one of the Sandwich Islands.

The specimens bear mature fruit only, and are insufficient for the positive determination of the genus. They were gathered from a tree of considerable size; the sensible properties of which are not recorded. No aroma or pungent taste is perceptible in the dried bark of the branches, which are *unarmed*, and *no dots* in the foliage, which is very *coriaceous*. *Leaves alternate*, *glabrous*, as are all the parts, *pinnately 3–5-foliolate;* the petiole and rhachis terete. *Leaflets oval*, obtuse, more or less unequal at the base, except the terminal one, which is long-petiolulate, the others short-petiolulate, one and a half to two and a half inches long, very opaque, not shining, of the same hue both sides, veiny, *entire*. *Panicles* or cymes *axillary*, shorter than the leaves, short-peduncled, apparently *compound* and many-flowered: but in the specimens only a few dehiscent carpels remain. There are some traces of at least two carpels to each flower, only one of which has ripened. The follicles are *stipitate* (stipe 2 lines long), short and turgid, 4 to 5 lines long, somewhat wrinkled and punctate, two-valved from the apex; the endocarp not readily if at all separating from the exocarp. Seed solitary, filling the cell, oval, with a black and shining, somewhat drupaceous testa of great thickness. Embryo nearly of the length and breadth of the albumen: cotyledons round-oval: radicle superior.

ORD. SIMARUBACEÆ.

1. AMARORIA, Nov. Gen.

Flores monoici vel dioici. Masc.—*Sepala 6, an semper? Petala nulla. Stamina numero sepalorum, iisdem opposita: antheræ subsessiles. Discus carnosus, profunde trifidus, lobis bifidis.* Fœm.—*Sepala 4–5, parva, persistens. Petala 4–5, linearia, carinata, reflexo-patentia. Rudimenta staminum petalis numero dupla, minima, sub disco incrassato 8–10-crenato inserta. Ovarium simplex, ovoideum, uniloculare, uniovulatum, vertice stigmate sessilli maximo depresso reniformi crasso obtectum. Ovulum sub apice loculi appensum, subanatropum. Drupa sicca, nuciformis, ovoidea, subcompressa, epicarpio tenui, putamine osseo. Semen loculum implens, amphitropum, exalbuminosum. Cotyledones ovales, planæ: radicula brevissima, supera.—Arbuscula* Soulameæ amaræ *facie, foliis longius petiolatis.*

1. AMARORIA SOULAMEOIDES, Sp. Nov. (Tab. 40.)

HAB. Mountains of Muthuata, Feejee Islands.

Apparently a small tree, with stout and simple branches, scarred by the large and approximate cicatrices of the fallen leaves; the young shoots and nascent leaves minutely silky-pubescent; otherwise glabrous. Leaves alternate, crowded, almost exactly like those of *Soulamea amara*, except that they have *longer petioles* (from 2 to 3 inches in length) and are rather narrower and less contracted towards the base, elliptical-oblong or elongated-oblong, acute or obtuse, the base usually acute, 5 or 6 inches long, 2 or 2½ inches wide, coriaceous, entire, not punctate, copiously feather-veined; the primary veins straight, about 20 pairs, decurrent into an indistinct and waved intramarginal vein. Stipules none. Peduncles axillary, bearing a several-flowered, small, and racemose panicle, shorter than the petiole. Flowers either *monœcious or diœcious* (from the state of the specimens it is impossible to ascertain which), very small, about a line and a half long, on short pedicels. Bracts subulate, minute. *Male flowers* (known only from the analyses on the plate, made under Mr. Rich's superintendence). *Calyx of* 6 *ovate sepals. Petals wanting. Stamens* 6, opposite the sepals: *anthers subsessile,* ovoid-didymous, two-celled, probably introrse; the cells opening longitudinally. *Disk fleshy,* large, *deeply three-cleft;* the segments *two-lobed,* obtuse. No rudiments of a pistil. *Female flowers. Sepals* 4 *or* 5, oblong-ovate, *minute,* in anthesis much shorter than the pistil, erect, persistent, furnished with a small globular gland at the base on the inside. *Petals* 4 *or* 5, hypogynous, narrowly *linear, carinate,* at length *reflexed-spreading,* a line or a line and a half long, deciduous or marcescent. *Rudiments of stamens* 8 *or* 10, opposite and alternate with the petals, hypogynous, corresponding with the crenate sinuses of the disk, which they slightly exceed in length, *minute,* thickened above, but not antheriferous. *Disk very thick* and fleshy, somewhat saucer-shaped, the edge 8–10-*crenate,* or 4–5-lobed, with the lobes emarginate. *Ovary simple,* sessile in the disk, longer than the petals, fleshy, *ovoid,* scarcely at all compressed, *one-celled, one-ovuled,* its apex covered by the *very large and fleshy, depressed, kidney-shaped, sessile stigma. Ovule* borne on one side of the cell *below its summit,* between amphitropous and anatropous; the micropyle superior. Fruit a dry *drupe or nut, ovoid, slightly compressed,* scarcely margined, an inch in length, slightly pointed, indehiscent; the *epicarp thin* and crustaceo-coriaceous, smooth; the *putamen* bony. *Seed filling the cell, amphitropous,* oval, with a membranaceous testa, *destitute of albumen.* Embryo conformed to the seed: *cotyledons oval, flat,* rather fleshy: *radicle very short,* partly included, *superior.*

The drupe and the wood are very bitter, perhaps as much so in *Soulamea,* which was named by Rumphius, from this quality, *Rex Amaroris.* In allusion both to this sensible property, and to the Rumphian name of its nearest ally, I have chosen the name of the genus, from *amaror,* bitterness. For our plant is evidently generically distinct from *Soulamea,* as well by its 4–6-merous (instead of trimerous) floral envelopes, and the completely diclinous (instead of monœcio-polygamous) flowers, as by its monocarpellary ovary, and its thickened, nut-like fruit. I regret that I am wholly unable to confirm the characters of the male flowers; the few buds which existed on the specimens having been destroyed in the preparation of the analyses given upon the plate, which was prepared and engraved under the superintendence of Mr. Rich. I have merely caused some further details of the ovary and fruit to be added or corrected. (Fig. 12–15.)

PLATE 40.—AMARORIA SOULAMEOIDES; a branch of the female plant, of the natural size. Fig. 1. Expanding bud of a male flower. 2. Same, with the sepals and one of the stamens removed. 3. Male flower, with the stamens removed, showing the lobed disk. 4, 5. Anthers. 6. Portion of the inflorescence, with female flowers. 7. Female flower. 8. A petal. 9. A sepal. 10. An abortive stamen. 11. Female flower, with the pistil removed, and a portion longitudinally cut away. 12. Vertical section of a pistil and receptacle, showing the ovule.—All these figures variously magnified. 13. Fruit, of the natural size. 14. Vertical section of the same, showing the seed. 15. The embryo, of the natural size.

ORD. OCHNACEÆ.

1. GOMPHIA, *Schreb.*

1. GOMPHIA LINEARIS, Sp. Nov. (Tab. 41.)

G. ramosissima, glaberrima; ramis gracillimis; foliis linearibus utrinque acutiusculis brevissime petiolatis subintegerrimis subaveniis; stipulis subulatis caducis; paniculis terminalibus paucifloris; petalis calyce vix longioribus; antheris lævibus; gynophoro ovario longiore.

HAB. Organ Mountains, near Rio Janeiro, Brazil; in deep shady woods.

Shrub 5 to 10 feet high, *entirely glabrous, much branched, the branches very slender,* and perhaps somewhat climbing or sarmentose, very leafy; the youngest branchlets minutely puberulent. *Leaves linear,* or linear-lanceolate, often falcate, mucronulate, one to two inches long, one to 3 lines wide, tapering more or less to the apex, which, like the base is *rather acute, on very short petioles* (of barely a line in length), entire, or sometimes obscurely serrulate above the middle, not shining, *almost veinless* to the naked eye, under a lens showing rather sparse and indistinct, oblique, simple, primary veins. *Stipules subulate,* rather longer than the petioles, scarious, striate, distinct, *early deciduous* for the most part. *Panicles terminal,* small, loosely *few-flowered;* the branches divaricate. Bracts minute, caducous. Pedicels one to 3 lines long, very glabrous. Flowers 3 or 4 lines in diameter, yellow; the buds ovoid and very obtuse. Sepals thin, elliptical-oblong, very obtuse, deciduous. *Petals rather longer than the calyx,* obovate. *Anthers smooth and even,* oblong-linear, sessile. *Gynophore longer than the* pentacarpellary *ovary,* columnar. Style filiform, elongated. Stigma simple, acute. Ovule arising from a little above the base of the cell, ascending, between anatropous and amphitropous, straight; the micropyle inferior. Fruit not seen.

Allied in some respects to *Gomphia stipulacea* and *G. salicifolia*, but a truly distinct, and apparently entirely new species, with narrower leaves than any other known *Gomphia*.

PLATE 41.—GOMPHIA LINEARIS: a branch, of the natural size. Fig. 1. A leaf, somewhat enlarged, showing the venation and the stipules. 2. Diagram of the flower. 3. An expanded flower. 4. A sepal. 5. A petal. 6, 7. Anthers. 8. Pistil, with the gynophore and pedicel. 9. Vertical section of the same.—The details enlarged.

2. GOMPHIA STIPULACEA, *Planch.*

Ochna stipulata, Velloz. Fl. Flum. 5, t. 91.
Gomphia stipulacea, Planch. in Hook. Lond. Jour. Bot. 6, p. 6.
G. iteoides, Erhard, in Flora (Bot. Zeit.), 1849, p. 251?

HAB. Organ Mountains, Brazil.

The specimen resembles Gardner's No. 5692; but the flowers are decandrous; and the leaves (of which the larger are almost three inches long) are not three-toothed, but barely emarginate at the apex.

3. GOMPHIA PARVIFLORA, *DC.*

Gomphia parviflora, DC. in Ann. Mus. 17, p. 420, t. 16; Planch. l. c.; Erhard, l c.
Ochna Jabotapita, Velloz. Fl. Flum. 5, t. 90.

HAB. Vicinity of Rio Janeiro, Brazil.

4. GOMPHIA ÆMULA, *Pohl.*

Gomphia æmula, Pohl, Pl. Bras. Ic. 2, p. 180, t. 182, ex tab.; Erhard, l. c. p. 249.

HAB. Organ Mountains, Brazil. (With young fruit.)

5. GOMPHIA OLIVÆFORMIS, *St. Hil.*

Gomphia olivæformis, St. Hil. Fl. Bras. Mer. 1, p. 67; Planch. in Hook. Lond. Jour. Bot. 6, p. 11.

HAB. Rio Janeiro, and on the Organ Mountains, Brazil.

2. BRACKENRIDGEA, Nov. Gen.

Calyx persistens. Antheræ (læves) longitudinaliter dehiscentes. Stigma leviter quinquelobum. Ovulum circa processum e fundo ovarii assurgentem curvatum, hippocrepicum. Semen angustum circinnatum. Embryo semini conformis, gracilis; cotyledonibus anguste linearibus; radicula centripeto-infera. — Flores umbellato-fasciculati. — Cætera Gomphiæ.

The plant from which this character is derived appears to be neatly distinguished from *Gomphia*, by the *longitudinal dehiscence of the anthers*, the *nearly annular ovule and seed, curved around a large projection into the cell of the ovary* (in the manner of *Menispermum*), which arises from its inner angle near the base, and by the *slender embryo, with narrowly linear cotyledons;* to which may be added, as subsidiary characters, the entirely *persistent calyx*, and the radiately *somewhat five-lobed stigma*. The *Gomphia? Hookeri*, of Planchon, in Hook. Lond. Jour. Bot. 6, p. 3, from Penang, is most probably a second species of the genus; and some other *Gomphiæ* of the Old World make some approach to it in the curvature of the ovule, and have persistent calyxes; but the embryo and anthers of *Gomphia*, so far as known, are different.

The name selected for this genus is intended to commemorate the important scientific services of Mr. William D. Brackenridge, the Assistant Botanist of the Expedition, through whose indefatigable zeal and industry this botanical collection was principally made, of which he has himself elaborated the Ferns and the allied orders.

1. Brackenridgea nitida, Sp. Nov. (Tab. 42.)

B. glaberrima; foliis oblongis lanceolatisve nitidis; pedicellis in umbellas sessiles axillares et terminales multifloras fasciculatis cum rhachi brevissima articulatis; floribus flavidis; filamentis brevissimis.

Hab. Sandalwood Bay, Vanua-levu, one of the Feejee Islands.

A shrub, or small tree, 15 or 20 feet high, *entirely glabrous* throughout; the bark of the branchlets mostly wrinkled or corrugated. *Leaves* alternate, varying from *oblong* to *lanceolate*, 3 to 6 inches long and one or two wide; the broader ones more or less obtuse; the narrower commonly acute at both ends, on very short and thickened petioles (the bark of which becomes corrugated like that of the branchlets), coriaceous, entire, very smooth and *shining*, especially above, finely and very copiously feather-veined, the veins obliquely transverse, except one or two usually of the lower ones on each side, which are procurrent within the margin and parallel to it, and continued to the apex of the leaf, inosculating with the ascending extremities of the finer transverse veins. Stipules small, subulate-setaceous, and with two lateral cusps about the middle, their bases united within the petiole, as in the *Gomphiæ* of the Old World, caducous. *Pedicels aggregated in sessile and many-flowered umbels or fascicles, in the axils* of the leaves, *or sometimes terminal on very short spurs* or tubercular bases, which are often clustered, and clothed with minute and scarious, deciduous scales: the pedicels are 6 or 8 lines long, at least in fruit, *articulated at their insertion*, filiform. Calyx of 5 broadly oval and chartaceo-membranaceous sepals, imbricated in æstivation, yellowish, spreading, persistent in fruit. Petals 5, oval-obovate, apparently *yellow*, about as long as the calyx, hypogynous, imbricated in æstivation, deciduous. Stamens 10, hypogynous, inserted on the summit of a short and thick gynobase, outside of a narrow disk or margin which surrounds the base of the ovary: *filaments very short*, persistent: anthers articulated with the filament, innate, linear-oblong, smooth (not wrinkled), two-celled, with a rather broad connective, the cells opening longitudinally for their whole length at the margins. Pollen-grains spherical, simple. Ovary five-parted on the summit of the short gynobase; the lobes connected only at their insertion around the base of the columnar five-grooved style, laterally compressed, smooth, one-ovuled. Stigma truncate, radiately somewhat five-lobed. Ovule linear, arising from the base of the cell outside of the thick, ascending protuberance that partly fills the cavity, around which it is curved nearly into the shape of a horse-shoe: it is anatropous, with a ventral rhaphe; the micropyle next the hilum. Fruit of 5 baccate drupes, somewhat compressed, borne on the margin of the enlarged and depressed, disk-shaped, fleshy gynobase; the sarcocarp very thin; the endocarp coriaceous, coherent with the edges of the internal projection, so that a transverse section at the middle shows four small cells, two of them occupied by the seed, the lateral ones empty. Seed linear, conformed to the cell, coiled nearly into a ring; its testa membranaceous. Albumen none. Embryo conformed to the seed, nearly annular: the thin cotyledons narrowly linear; the slender radicle centripetal-inferior.

PLATE 42.—BRACKENRIDGEA NITIDA: a branch, of the natural size, in flower and in fruit. Fig. 1. Stipules, with part of a young leaf. 2. Unopened flower. 3. Expanded flower. 4, 5. Stamens. 6. Pistil. with the gynobase and persistent filaments. 7. Vertical section of the same, showing the curved ovules in place, &c. 8. Immature fruit, with the persistent calyx. 9. Mature fruit, with the calyx. 10. Vertical section of one of the drupes, showing the seed. 11. Transverse section of the same. 12. The embryo detached.—The details variously enlarged.

ORD. ANACARDIACEÆ.

1. MANGIFERA, *Linn.*

1. MANGIFERA INDICA, *Linn.*

HAB. Near Manilla. (Only foliage of the *Mango* was collected.)

2. ANACARDIUM, *Rottb.*

1. ANACARDIUM OCCIDENTALE, *Linn.*

HAB. Near Rio Janeiro, Brazil. "Only seen in a cultivated state."

3. ONCOCARPUS, Nov. Gen.

Flores dioici (seu monoici?). Calyx cupularis, quinquedentatus. Petala 5, hypogyna, oblonga, patentissima, æstivatione valvata. Masc.—*Stamina 5, circa torum hemisphæricum hirsutum inserta. Gynæcium nullum.* Fœm.—*Stamina nulla? Ovarium pyramidatum, basi quinquelobum, stigmate sessili truncato terminatum, uniloculare? Drupa depressa, difformis, torosa vel sublobata, toro incrassato carnoso obconico insidens; putamine osseo, sinuoso-multilobato, uniloculari, monospermo. Semen exalbuminosum, loculo sinuoso conforme; testa tenui. Embryo transversus; cotyledonibus carnosis lobatis; radicula brevissima.—Arbor simplicifolia,* Semecarpi *facie et inflorescentia.*

1. Oncocarpus Vitiensis, Sp. Nov. (Tab. 43.)

Hab. Feejee Islands. In a jungle at Rewa, Viti-levu. Also in the Sandalwood district of Vanua-levu; on hillsides.

Tree 30 or 40 feet high; the stout branches, foliage, &c., entirely glabrous. *Leaves simple,* alternate, of a thick and coriaceous texture, obovate-oblong, very obtuse, sometimes retuse, entire, or somewhat undulate or repand, more or less acute at the base, from 4 to 9 inches long, and from 2 to 4½ inches wide, on stout petioles of 6 to 18 lines in length, smooth, strongly pinnately-veined with 9 or 10 pairs of primary veins which, like the thickened midrib, are very prominent underneath, and inosculate near the margins; the veinlets extremely copious and finely reticulated. Stipules none. Flowers small, very numerous, in a compound terminal panicle, which is minutely pubescent. Pedicels very short. Bracts ovate-subulate, minute. *Male flowers. Calyx short, cup-shaped*, five-toothed, puberulent. *Petals* 5, *hypogynous, oblong*, acutish, puberulent outside, *valvate in æstivation*, with a minute inflexed apex, *widely spreading*, a line and a half long, deciduous. *Stamens* 5, alternate *with the petals*, and inserted with them around the depressed, or *hemispherical and hirsute torus* that occupies the centre of the flower: filaments filiform-subulate, rather shorter than the petals: anthers oblong, emarginate at both ends, two-celled, attached to the apex of the filament a little above the notch at the base, introrse; the cells opening longitudinally. *Pistil none. Female flowers* known only from a sketch made by the botanical draughtsman of the Expedition (copied in Fig. 5, 6 of the Plate), which represents the calyx and corolla as in the male flowers, *no stamens*, and a conical or *pyramidal ovary, with 5 obtuse lobes at the base*, alternate with the petals, occupying the centre of the flower; the *stigma sessile and truncate:* its interior structure is not represented; but it is probably one-celled. *Fruit* a *depressed*, and as it were *deformed, knobby drupe, borne on a* short and *thickened, obconical, fleshy torus* (3 or 4 lines long), which is much smaller than the pericarp: sarcocarp fleshy: *putamen bony*, depressed, irregularly *sinuate-lobed* (the lobes about 8) *one-celled. Seed solitary, conformed to the sinuose cell*, with a very thin integument: *albumen none. Embryo transverse,* conformed to the cell: *cotyledons irregularly lobed*, fleshy, partly consolidated: *radicle extremely short*, centrifugal.

The tree is said to be poisonous, producing inflammation of the skin, with eruption, like *Rhus venenata*, or *Anacardium* and *Semecarpus*. From *Semecarpus* our plant generically differs in the valvate æstivation of the corolla, the smaller fructiferous receptacle, and the drupaceous, depressed, knobby or tuberculate fruit (whence the name, from ὄγκος, a *tubercle* or *swelling*, and καρπός, *fruit*), with an exceedingly sinuous and lobed putamen, to which the seed is conformed. Perhaps our plant is more nearly related to Mr. Bentham's genus *Cyrtospermum*, from the Amazon: but that has decandrous and hermaphrodite flowers, an ovoid drupe, and the putamen and cotyledons not lobed.

PLATE 43.—ONCOCARPUS VITIENSIS: the male plant, in flower. Fig. 1. Diagram of a male flower. 2. The flower, expanded. 3, 4. Stamens. (5. Unexpanded female flower. 6. The same, expanded. From a sketch by Mr. Agate.) 7. Branch of the panicle, with fruit, of the natural size. 8. Vertical section of a young drupe and its fleshy torus. 9. Transverse section of the same. 10, 11. Putamen. from two different drupes, one seen from above, the other from below. 12, 13. Embryo, of the natural size.—The details enlarged.

4. BUCHANANIA, *Roxb.*

1. BUCHANANIA FLORIDA, *Schauer*. (Tab. 44.)

B. glabra; foliis obovato-oblongis obtusis retusisve in petiolum attenuatis; paniculis ramosis laxifloris glabellis; pistillis in disco cupulari multidentato semiïmmersis.

Buchanania florida, Schauer, in Reliq. Meyen. p. 481.

HAB. Vanua-levu, one of the Feejee Islands.

A shrub, or tree, with stout and thick branches, towards the extremity of which the leaves are crowded, *glabrous*, or the nascent branchlets pubescent. *Leaves obovate-oblong*, 5 or 6 inches long and 2 or more wide, very *obtuse*, *sometimes retuse*, mostly acute at the base, coriaceous, dull; the stout petiole half or two-thirds of an inch in length. *Panicles* in the axils of the leaves at the summit of the branch, *branching, loosely many-flowered*, slightly pubescent under a lens, exceeding the leaves. Pedicels shorter than the flowers. Calyx glabrous, persistent, five-cleft; the lobes broadly ovate, obtuse, slightly if at all ciliate, probably imbricated in æstivation. Petals 5, scarcely 2 lines in length, ovate-oblong, recurved-spreading, deciduous. Stamens 10, rather shorter than the petals, and inserted with them: filaments subulate: anthers oblong, somewhat sagittate. *Disk cupulate*, exceeding the calyx, with the base of which it is scarcely coherent, thick and fleshy, the thinner edge minutely *many-toothed*. *Pistils* usually 5, *half immersed in the closely encircling disk*, slightly hairy, one (or sometimes 2 or 3) of them obliquely ovate and ovuliferous; the others fusiform and effete. Styles scarcely any: stigma terminal, thickened, very obtuse. Only the immature fruit is known; in which two or three of the ovaries sometimes enlarge and become more or less coherent at the base: probably only one of them is fertile.

The plant here described well accords with the character and an imperfect original specimen of Schauer's *B. florida*, from Manilla, except that the flowers are larger, and the lobes of the calyx show scarcely a trace of minute ciliate hairs.—From the ticket, I perceive that Mr. Rich supposed our plant to be the *Rhus atrum* of Forster, a New Caledonian species, which has obovate and coriaceous leaves, indeed, but bears its (probably pentandrous) flowers in a dense, spicate-crowded inflorescence, much shorter than the leaves.

PLATE 44, *A*.—BUCHANANIA FLORIDA: a branch in flower, of the natural size. Fig. 1. A flower. 2. A petal. 3, 4. Stamens. 5. Vertical section of a flower. 6. Pistils, with the enclosing disk. 7. The fertile and a sterile pistil; the former with the ovary vertically divided, to show the ovule.—The analyses all magnified.

5. RHUS, *Linn.*

1. RHUS SIMARUBÆFOLIA, Sp. Nov. (Tab. 44.)

R. glabra; foliis pinnatis, rhachi superne marginata: foliolis 7–9 *oblongis obtusis basi inæquilateris integerrimis supra nitidis subtus pallidis subsessilibus; paniculis axillaribus laxifloris folio paullo brevioribus; floribus albis.*

Hab. Muthuata, one of the Feejee Islands.

Shrub (the size not recorded) *glabrous* throughout; the branchlets somewhat warty or dotted, when young reddish, as are the petioles. *Leaves pinnate.* Petiole and rhachis 5 or 6 inches long, the latter angled and becoming narrowly *margined* between the upper pairs of leaflets, and more so below the terminal leaflet. *Leaflets* 7–9, *oblong* or narrowly elliptical, one or two inches in length, *obtuse, nearly sessile,* all but the terminal one strongly oblique or *inæquilateral at the base, entire,* of a rather firm texture (evidently deciduous), copiously feather-veined; the veins rather indistinct on the *shining upper surface,* but more conspicuous on the *pale lower surface. Panicle axillary, rather shorter than the leaf, loosely flowered;* the flowers numerous, on pedicels of one or two lines in length, probably polygamous. Calyx five-lobed; the lobes very short and obtuse. *Petals white,* oval-obovate, a line and a half in length, veiny; with a midrib which is rather prominent on the upper surface and a little hairy towards the base. Stamens 5, shorter than the petals, inserted around the fleshy ten-grooved or crenate disk. Ovary glabrous, one-celled, with 3 thickened subsessile stigmas. Fruit not seen.

This species belongs to the section *Sumac,* and to the group which comprises *R. Copallina.* The leaflets, although thinner and with a different venation, bear some resemblance to those of *Simaruba glauca,* whence the specific name.

Plate 44, *B.*—Rhus simarubæfolia: a flowering branch, of the natural size. Fig. 1. A flower. 2. A petal. 3. Flower, with the petals removed. 4. Pistil and disk. 5. Vertical section of the pistil. —The analyses magnified.

2. Rhus Taitensis, *Guill.*

Rhus Taitensis, Guillem. Zeph. Tait. p. 67, & in Ann. Sci. Nat. ser. 2, 7, p. 361.

Hab. Tahiti: in mountain forests, sometimes in scattered groves. Common also at Tutuila, Navigators' Islands, and at Tongatabu.

I find no Tahitian specimens in the collection; but those from the Tonga and Samoan Islands (both in fruit only) accord very well with the character of *R. Taitensis*, except that in the Samoan specimen the leaflets are occasionally even 6 inches long, and some of them acuminate. The pinnæ are often fewer than 10 pairs. The drupe is black, smooth and shining, 2 or 3 lines in diameter.

3. Rhus Sandwicensis, Sp. Nov.

R. ramulis novellis velutino-tomentosis; foliis pinnatis; foliolis 5–9 (*rarius* 3) *ovatis oblongisve subacuminatis serratis subsessilibus supra glabratis subtus cum rhachi immarginata paniculaque terminali composita amplissima tenuiter tomentosis; floribus parvis.*

Hab. Sandwich Islands: Oahu, in the mountains behind Honolulu (where it was collected by the late Rev. J. Diell); and in forests near Hilo, Hawaii. (Byron's Bay, Hawaii, Macrae. Oahu, Gaudichaud.)

Shrub 4 to 10 feet high, with much the habit of *R. typhina;* the stout branches warty, smooth, or *when developing velvety-tomentose; the marginless petioles, inflorescence, &c., tomentose with a fine and soft pubescence. Leaves pinnately* 5–9-*foliolate*, or the upper ones sometimes *trifoliolate. Leaflets oval or oblong*, more or less acute or *slightly acuminate*, ample, from 2 to 6 inches long, and from an inch to 4 inches wide, more or less *serrate, almost sessile*, copiously feather-veined, with 12 to 20 pairs of straight veins, which are prominent on the *downy under surface, the upper face nearly glabrous.* The leaves considerably resemble those of a Walnut or Butternut. *Panicle terminal, very large, and compound* (sometimes with smaller ones in the upper axils), loose and open, often a foot in diameter, very many-flowered; the *flowers small* (a line and a half in diameter), apparently yellowish-white, racemosely crowded on the ultimate ramifications. Calyx nearly glabrous, deeply five-cleft; the lobes oblong-ovate, minutely ciliate, not half the length of the oval and minutely ciliolate petals. Stamens 5, rather shorter than the petals. Styles 3, clavate. Fruit not seen.

This very distinct and still unpublished species (apparently allied to *R. juglandifolia* of New Grenada) was sent to me many years since by the late Mr. Diell, when I communicated a specimen to the herbarium of Sir William Hooker, under the name here adopted.

4. Rhus lucida, *Linn.*

Hab. Cape of Good Hope, in the vicinity of Cape Town. (Foliage only.)

6. LITHRÆA, *Miers.*

1. Lithræa caustica, *Hook. & Arn.*

Lithræa caustica, Hook. & Arn. Bot. Misc. 3, p. 175.
L. venenosa, Miers, Trav. in Chil. 2, p. 529; Gay, Fl. Chil. 2, p. 44.
Laurus caustica, Molina, Chil. p. 151; Willd. Spec. Pl. 2, p. 479.
Rhus? caustica, Hook. & Arn. Bot. Beech. Voy. p. 15, t. 7.

Hab. Chili, from Valparaiso to the base of the Cordilleras near Santiago. Both the smooth and the downy forms; the latter more common near the coast.

7. DUVAUA, *Kunth.*

1. Duvaua dependens, *DC.*

Hab. Near Valparaiso, Chili.

Besides the narrow-leaved form of the species, which answers to *Amyris polygama*, Cav. Ic. 3, t. 239, and the var. *latifolia* (*D. latifolia*, Gillies), which is considered to be only a state of the species with broad and mostly toothed leaves, there is a variety like the latter, but with very downy leaves and branchlets.

Duvaua? dentata, DC. Prodr. 2, p. 74 (*Schinus dentatus*, Andr. Bot. Rep. t. 620), is wholly founded on a cultivated plant, supposed, on mere hearsay evidence, to come from Hawaii. But I have seen nothing like the plant figured, in any collection made at the Sandwich Islands.

8. SCHINUS, *Linn.*

1. Schinus terebinthifolius, *Raddi.*

Hab. Brazil; common around Rio Janeiro, and in the Organ Mountains.

2. Schinus Molle, *Linn.*

Hab. Peru; very abundant around Lima.

9. MAURIA, *H. B. K.*

1. Mauria multiflora, *Mart.*

Mauria multiflora, Mart. Herb. Fl. Bras. no. 1274; Benth. in Hook. Kew Jour. Bot. 4, p. 8.

Hab. Brazil, near Rio Janeiro.

For the probable synonymy of this species, see Mr. Bentham's annotations, in the work here cited.

10? JULIANIA, *Schlecht.*

Juliania, Schlecht. in Linnæa, 17 (1843), p. 746, non Llave & Lex.
Hypopterygium, Schlecht. in Linnæa, l. c. p. 635, non Bridel.

1. Juliania Huaucui, Sp. Nov.

J. fructu recto æquilatero (tripollicari et ultra).

Two leafless branches are in the collection, from "the vicinity of Yanga, Peru," with nothing besides a terminal fascicle of immature, pendent, samaroid fruits, of a peculiar structure, the pericarp being borne on the apex of a long and linear wing (2½ inches in length and half an inch wide), its base narrowed into a short peduncle. The fruit may be likened to that of an Ash inverted. The structure of the pericarp itself, which is involved in the apex of the wing, cannot be made out in the specimens, farther than that it is dry, and appears to be by abortion one-celled and one-seeded. A specimen of the same plant, in nearly the same condition, and collected in the same district, is preserved in the herbarium of Sir William Hooker, where it is referred to the genus *Juliana* of Schlechtendal. It was collected by Mr. Matthews, who sent with it the following note:—"Small tree, covering the sides of the base of the Cuesta of Purruchuca, province of Canta, Peru; April, 1831." Another specimen, from Lima, McLean, is ticketed "*Huancui* of the natives: a diœcious shrub, seldom seen with leaves, and always black as if burned or blasted." Not having at the time collated the materials in the Hookerian herbarium with the character and description of Schlechtendal's *Juliana* (or *Hypopterygium*) *adstringens*, of Mexico, I cannot say whether our plant is correctly referred to that genus. It can hardly be the same species, since the wing of the fruit is *straight* and *equal-sided*, and an inch longer than that of the Mexican plant is said to be.

11? CORYNOCARPUS, *Forst.*

1. CORYNOCARPUS LÆVIGATA, *Forst.*

Corynocarpus lævigata, Forst. Prodr. Fl. Ins. Austr. p. 19; Hook. Bot. Mag. t. 4397; Hook. f. Fl. N. Zeal. p. 48.

HAB. Bay of Islands, New Zealand.

The specimens consist of foliage only.—A genus of very doubtful affinity, which Dr. Hooker has recently appended to the *Anacardiaceæ*.

ORD. BURSERACEÆ.

1. CANARIUM, *Linn.*

1. CANARIUM VITIENSE, Sp. Nov.

C. glaberrimum; stipulis subulatis parvis caducis; foliolis 5–7 *oblongo-ellipticis utrinque obtusis nunc subacuminatis nitidis; paniculis axillaribus paucifloris; pedicellis (semipollicaribus et ultra) clavatis.*

Var. *β. foliolis* 5–9 *sæpius apice vel utrinque plus minus acuminatis.*

HAB. Feejee Islands: on Muthuata, at an elevation of 2,000 feet.

A shrub or tree, perfectly glabrous in every part; the *leaflets* 5 *or* 7, smooth and *shining*, mostly *obtuse* or obtusish at both ends, sometimes *rather acuminate* (or the terminal one acute at the base), coriaceous, about 3 inches long and 2 in width, veiny. Neither the flowers nor the ripe fruit are known; the specimens bearing only immature drupes (less than an inch long), in small, evidently *few-flowered, axillary* (or slightly supra-axillary) *panicles* or racemes, which are shorter than the leaves. Fructiferous *pedicels half an inch or more in length*, stout, *clavate*, bearing the persistent, three-angled, spreading calyx (about 5 lines in diameter), which surrounds the acute base of the fusiform, somewhat triangular, sharp-pointed, glabrous, immature drupe: the latter contains a single forming seed.—The variety has more numerous and thinner, as well as acuminate leaflets; but it is probably merely a state of the species, growing in a more shaded situation.

The species appears to be abundantly distinct from any of those recently characterized by Blume, and to bear most resemblance to Bentham's *Canarium asperum*, from New Guinea.

2. CANARIUM (PIMELA) LUZONICUM.

Pimela Luzonica, Blume, Mus. Bot. Lugd.-Bat. p. 220?
Canarium album, Blanco, Fl. Filip. p. 793, non Rœusch, ex Blume, l. c.

HAB. Vicinity of Baños, Luzon. (An imperfect fruiting specimen.)

2. EVIA, *Comm.*

1. EVIA DULCIS, *Comm.*, *Blume.*

Evia dulcis, Commerson Mss. ex Juss.; Blume, Mus. Bot. Lugd.-Bat. p. 233.
Chrysomelon pomiferum, Forst. Mss. in Mus. Bot. Par.
Spondias dulcis, Forst. Prodr. p. 34; DC. Prodr. 2, p. 75; Guill. Zeph. Tait. p. 68.
Spondias Cytherea, Sonn. Itin. 2, p. 222, t. 123; Gærtn. Fruct. t. 103.
Poupartia dulcis, Blume, Bijdr. p. 1161.

HAB. Tahiti and Eimeo, Society Islands: common on the coast and in the interior. Also cultivated at the Tonga and other islands. The *Vi apple*, a well-known fruit.

3. DRACONTOMELON, *Blume.*

1. DRACONTOMELON SYLVESTRE, *Blume.*

Dracontomelon sylvestre, Blume, Mus. Bot. Lugd.-Bat. p. 231.
Pomum Draconis sylvestre, Rumph. Herb. Amboin. 1, p. 159, t. 59.

HAB. Planted at Rewa, Feejee Islands.

This genus Blume distinguishes from *Spondias* by the imbricative æstivation of the calyx, the united styles, and the remarkably depressed, five-angled, and as if star-shaped, unarmed putamen of the fruit. The specimen in the collection is a fruiting one: the foliage answers well to the character of *D. sylvestre*, Blume: the fruit nearly accords with the figure of Blume's *D. mangiferum*. It is said by Dr. Pickering (who mentions the plant under the name of *Canarium?* in his volume on the *Races of Man*, p. 336) to be sour and edible.

ORD. CONNARACEÆ.

1. ROUREA, *Aubl.*

1. ROUREA HETEROPHYLLA, *Planch.*

Rourea heterophylla, Planchon, Prodr. Connar. in Linnæa, 23, p. 419.

HAB. Vanua-levu, Feejee Islands. (In fruit only.)

The plant characterized by Planchon, from Cuming's Philippine collection, is in flower only. Ours, which appears to be the same, has the fruit. The young pods are usually solitary, oblong, glabrous, scarcely more than 3 lines long, and not twice the length of the calyx; but when full grown they are 6 or 7 lines long.

2. CONNARUS, *Linn., Planch.*

1. CONNARUS PICKERINGII, Sp. Nov. (Tab. 45.)

C. ramulis foliisque junioribus pube ferruginea decidua tomentosis; foliolis 5–7 (*rarius* 3) *lanceolato-oblongis nunc ovato-oblongis subacu-*

minatis basi obtusis vel rotundatis, adultis glaberrimis, venis utrinque 5–6 *subtus prominentibus, rete tenui transverso; paniculis folio multo brevioribus calycibusque rufo-tomentosis; pedicellis brevissimis; petalis extus tomentosis glanduloso-punctatis calyce triplo longioribus; folliculis obovatis turgidis tomento detersibili primum vestitis, stipite petalis longiore.*

Hab. Feejee Islands: on Ovolau, Rewa, and Vanua-levu.

Shrub apparently of considerable size; the *younger branchlets with the developing leaves, &c., tomentose* with a rusty or reddish pubescence, which is soon *deciduous*, except from the inflorescence. Leaves alternate, pinnate, with 5 *to* 7 *leaflets, or rarely only* 3. The leaflets are of a chartaceous texture, *entirely glabrous when full grown*, not shining, from 3 to 6½ inches long and 1¼ to 2 inches wide, varying from *lanceolate-oblong* to *ovate-oblong*, most of them *slightly acuminate, obtuse or rounded at the base*, on partial petioles of 3 lines in length: the primary *veins* 5 *or* 6 *pairs*, prominent underneath, connected by slender veinlets which form *transverse reticulations*. Vestiges of the rusty pubescence often persist on the midrib underneath. *Panicles shorter than the leaves* or even the petioles, axillary and terminal, many-flowered, clothed with *reddish wool*. *Pedicels very short.* Calyx a line and a half long, deeply five-cleft, woolly, like the inflorescence. Petals spatulate, 3 lines long, more or less tomentose outside, and sprinkled with orange-coloured *glandular dots*. Stamens 10; those of both series bearing fertile anthers. Ovary and style ferrugineous-pubescent. *Pod obovate, turgid*, an inch in length, excluding the stipe, or contracted base (which is 3 lines long, *exceeding the marcescent petals*), and 7 or 8 lines wide, thick and coriaceous, *clothed with a rusty down, which rubs off* at maturity, two-valved. Seed solitary, conformed to the cell, attached above its base; its lower part embraced by a lobed and somewhat lacerate arillus. Cotyledons fleshy, plano-convex, conformed to the seed. Radicle short, superior.

This species appears to be most nearly related to *Connarus mutabilis* of Blume, a native of the Indian Archipelago; but it has more tomentose branchlets, &c., larger and smoother leaflets, pubescent petals, the stamens all with fertile anthers, and larger pods, the surface of which is not transversely striate.

PLATE 45.—CONNARUS PICKERINGII: in flower and in fruit. Fig. 1. A flower, enlarged. 2. A petal, more magnified. 3. Stamens and pistil, magnified. 4. Pistil, with the ovary divided longitudinally, to show the ovules, magnified. 5. An ovule, more magnified. 6. Seed, with a valve of the pod, of the natural size. 7. The embryo, of the natural size.

2. CONNARUS CYMOSUS, *Planch.*

Connarus cymosus, Planchon, Prodr. Connar. in Linnæa. 23, p. 430.

HAB. Brazil, in the Organ Mountains, near Rio Janeiro. (In flower only.)

3. CONNARUS BEYRICHII, *Planch. l. c.*

Var. ? *foliolis bi–quadrijugis cum impari subito acuminatis venosioribus.*

HAB. Brazil; with the preceding.

The specimen (with young fruit only) well accords with an authentic specimen of Planchon's *C. Beyrichii*, except that the leaflets, instead of three in number, are from *two to four pairs, abruptly pointed*, and less coriaceous, but *more veiny.*

3. BERNARDINIA, *Planch.*

1. BERNARDINIA FLUMINENSIS, *Planch.*

Bernardinia Fluminensis, Planchon, Prodr. Connar. in Linnæa, 23, p. 413.

HAB. Near Rio Janeiro, Brazil.

The specimen bears young fruit only: it appears to be identical with the plant upon which Planchon established his genus *Bernardinia*, in memory of Bernardin de St. Pierre.

ORD. LEGUMINOSÆ.

SUBORD. I. PAPILIONACEÆ.

1. PODALYRIA, *Lam.*

1. PODALYRIA BIFLORA, *Lam.*

Podalyria biflora, Lam. Dict. 5, p. 415; Walpers, in Linnæa, 13, p. 457.
P. subbiflora, DC. Prodr. 2, p. 102.

HAB. Cape of Good Hope, in the immediate vicinity of Cape Town.

2. CALLISTACHYS, *Vent.*

1. CALLISTACHYS LANCEOLATA, *Vent.*

Callistachys lanceolata, Vent. Hort. Malm. t. 115; DC. Prodr. 2, p. 104.

HAB. Near Sydney, New South Wales.

2. CALLISTACHYS SPARSA, *A. Cunn.*

Callistachys sparsa, A. Cunn. ex Benth. Comm. Legum. in Ann. Wein. Mus. p. 5.
Oxylobium? Pulteneæ, DC. Prodr. 2, p. 104.

HAB. Hunter's River, New South Wales;—where it was discovered by Allan Cunningham.

3. OXYLOBIUM, *Andr.*

1. Oxylobium? hamulosum, *Benth. ined.*

O. foliis confertis acerosis apice hamato-recurvis minute hispidulis; ramis apice paucifloris; leguminibus calycibusque hirsutis.

Hab. Hunter's River, New South Wales.

The specimen, in fruit only, is that of a Heath-like, suffruticose plant, a span or two in height; the branches clothed with a fine and appressed pubescence. *Leaves crowded*, alternate, or often imperfectly verticillate or opposite, *acerose*, with revolute margins, the acute *apex hooked*, the surface *minutely hispid* under a lens, or at length glabrate: they vary from 4 to 6 lines in length. The corymb is simple and *few-flowered at the end of the branches.* Lobes of the fructiferous calyx lanceolate from a broad base, acuminate, hirsute. *Legume hirsute*, ovoid-oblong, pointed, half an inch long, including the persistent style, without any partitions. The flowers are unknown; but the fruit is that of an *Oxylobium.*—It has not been identified in any other collection.

4. PODOLOBIUM, *R. Br.*

1. Podolobium trilobatum, *R. Br.*

Hab. Near Sydney, and Cook's River, New South Wales.

2. Podolobium obovatum, Sp. Nov.

P. foliis obovatis subrotundisve retusis integerrimis subtus ramulisque hirtello-puberis; ovario hirsutissimo breviter stipitato.

Hab. Near Sydney, New South Wales.

Apparently a procumbent or climbing plant, and most resembling the *P. scandens* of DeCandolle, which Bentham (in Comm. Legum. l. c. p. 6) has removed to *Oxylobium*, on account of its "sessile ovary and numerous ovules." But the ovary, in the single specimen of that species which I possess, appears to be substipitate, and to contain only 6 or 7 ovules. The present plant has thicker and broader, *obovate or roundish leaves*, mostly *retuse*, although mucronulate, all opposite and *entire; their lower surface, like the young branches, pubescent* with a fine and rather hirsute down. The flowers appear to be rather larger than in *P. scandens;* the lobes of the calyx are less obtuse; the *ovary*, as in that species, is *very densely hirsute*, and is raised on a manifest although *short stipe:* and the ovules are only 6 or 7. Hence the plant seems to be a *Podolobium*. The fruit is unknown.

5. CHOROZEMA, *Labill.*

1. Chorozema gomphocarpum, *Benth. ined.*

Hab. New South Wales, in the vicinity of Newcastle.

The specimens accord with the plant from Bidwill's Bay, so named by Mr. Bentham, the characters of which are perhaps already published. The species is a somewhat anomalous one, with rather the habit of *Oxylobium*.

6. GOMPHOLOBIUM, *Smith.*

1. Gompholobium barbigerum, *DC.*

Hab. Near Newcastle, New South Wales. (Flowers considerably larger than those of the following species.)

2. Gompholobium grandiflorum, *Smith.*

Hab. Sydney, New South Wales. (In fruit.)

3. Gompholobium glaucescens, *A. Cunn.*

Gompholobium glaucescens, A. Cunn. in Field, N. S. Wales, p. 346; Benth. Comm. Legum. l. c.
G. grandiflorum, *β. setifolium*, DC. Prodr. 2, p. 105.

Hab. With the preceding. (Foliage only.)

4. Gompholobium latifolium, *Smith?*

Hab. Sydney, New South Wales. (Foliage only, and hardly in a determinable condition.)

5. Gompholobium virgatum, *Sieber.*

Gompholobium virgatum, Sieber, Pl. Exsic. N. Holl. no. 360; DC. Prodr. 2, p. 105.

Hab. Sydney, New South Wales.

6. Gompholobium uncinatum, *A. Cunn. ex Benth.*

Hab. New South Wales; with the preceding species.

7. Gompholobium glabratum, *DC.*

Hab. New South Wales; probably with the preceding species.

8. Gompholobium pinnatum, *Smith.*

Hab. Near Sydney, New South Wales. (In fruit only.)

The root appears to be that of an annual plant, as DeCandolle suspected.

7. JACKSONIA, *R. Br.*

1. Jacksonia scoparia, *R. Br.*

Jacksonia scoparia, R. Br. in Hort. Kew. 3, p. 12; Benth. Comm. Legum. l. c. p. 10.

Hab. New South Wales, in the neighbourhood of Sydney.

8. DAVIESIA, *Smith.*

1. Daviesia acicularis, *Smith.*

Daviesia acicularis, Smith, in Linn. Trans. 9, p. 258; DC. Prodr. 2, p. 114.

Hab. New South Wales; in the vicinity of Sydney and Woolongong.

2. Daviesia ulicina, *Smith, l. c.*

Hab. New South Wales, near Sydney and along Hunter's River.

3. Daviesia corymbosa, *Smith, l. c.*

Hab. New South Wales; probably from the neighbourhood of Sydney.

9. VIMINARIA, *Smith.*

1. Viminaria denudata, *Smith.*

Hab. Woolongong, New South Wales. (In flower and fruit.)

10. PHYLLOTA, *DC., Benth.*

1. Phyllota aspera, *Benth.*

Phyllota aspera, Benth. Comm. Legum. in Ann. Wien. Mus. l. c. p. 13.
Pultenæa aspera, Sieber, Pl. Exsicc. N. Holl.; DC. Prodr. 2, p. 113.

Hab. Sydney, New South Wales.

2. Phyllota Baueri, *Benth. l. c.*

Hab. Sydney and Hunter's River, New South Wales.

11. AOTUS, *Smith.*

1. Aotus villosa, *Smith, DC.*

Hab. In the vicinity of Sydney, New South Wales.

12. DILLWYNIA, *Smith.*

1. Dillwynia ericæfolia, *Smith.*

Hab. New South Wales, near Sydney; where it appears to abound.

2. Dillwynia peduncularis, *Benth.*

Dillwynia peduncularis, Benth. Comm. Legum. in Ann. Wien. Mus. p. 14.

Hab. Hunter's River, New South Wales. (In fruit.)

3. DILLWYNIA PARVIFOLIA, *R. Br.*

HAB. In the vicinity of Newington, New South Wales.

4. DILLWYNIA GLABERRIMA, *Smith.*

HAB. Along Hunter's River, New South Wales.

5. DILLWYNIA TENUIFOLIA, *Sieber?*

HAB. In the vicinity of Sydney, New South Wales.

13. SPADOSTYLES, *Benth.*

1. SPADOSTYLES SIEBERI, *Benth.*

Spadostyles Sieberi, Benth. Comm. Legum. in Ann. Wien. Mus. p. 17.
Pultenæa euchila, DC. Prodr. 2, p. 112.

HAB. Near Sydney, New South Wales. (Flowering specimens only.)

14. PULTENÆA, *Smith.*

1. PULTENÆA DAPHNOIDES, *Smith.*

HAB. Near Sydney, New South Wales; apparently abundant.

2. PULTENÆA LINOPHYLLA, *Smith.*

HAB. New South Wales; with the preceding species.

3. Pultenæa retusa, *Smith.*

Hab. New South Wales; with the two preceding species.

4. Pultenæa polifolia, *A. Cunn.*

Hab. New South Wales: probably from the immediate vicinity of Sydney. A variety with larger leaves, &c.

5. Pultenæa stipularis, *Smith.*

Hab. In the vicinity of Sydney, New South Wales.

6. Pultenæa elliptica, *Smith.*

Hab. Near Sydney, New South Wales; very abundant.

7. Pultenæa biloba, *R. Br.*

Hab. Near Sydney, New South Wales.

8. Pultenæa villosa, *Smith.*

Hab. In the neighbourhood of Sydney, New South Wales.

15. MIRBELIA, *Smith.*

1. Mirbelia reticulata, *Smith.*

Hab. Sydney and Hunter's River, New South Wales. (In fruit.)

16. HOVEA, *R. Br.*

1. Hovea longifolia, *R. Br.*

Hab. In the vicinity of Sydney, New South Wales. (In fruit.)

2. Hovea lanceolata, *Sims.*

Hab. Hunter's River, New South Wales. (In fruit.)

17. PLATYLOBIUM, *Smith.*

1. Platylobium formosum, *Smith.*

Hab. In the vicinity of Sydney, New South Wales.

2. Platylobium parviflorum, *Smith.*

Hab. New South Wales; probably with the preceding species.

18. BOSSIÆA, *Vent.*

1. Bossiæa scolopendra, *Smith.*

Hab. New South Wales; probably from the vicinity of Sydney.

2. Bossiæa heterophylla, *Vent.*

Hab. In the vicinity of Sydney, New South Wales.

3. Bossiæa microphylla, *Smith.*

Hab. Sydney, New South Wales; with the preceding species.

19. RAFNIA, *Thunb.*

1. Rafnia axillaris, *Thunb.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

20. BORBONIA, *Linn.*

1. Borbonia barbata, *Lam.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

2. Borbonia lanceolata, *Linn.*

Hab. Cape of Good Hope; with the preceding species.

3. Borbonia cordata, *Linn.*

Hab. Cape of Good Hope; with the two preceding species.

21. PRIESTLEYA, *DC.*

1. Priestleya sericea, *DC.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

22. AMPHITHALEA, *Eckl. & Zeyher.*

1. Amphithalea densa, *Eckl. & Zeyher.*

Amphithalea densa, Eckl. & Zeyh. Enum. Pl. Afr. Austr. p. 167; Benth. in Lond. Jour. Bot. 2, p. 451.

Hab. Cape of Good Hope.

23. HALLIA, *Thunb.*

1. Hallia virgata, *Thunb.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

2. Hallia cordata, *Thunb.*

Hab. Cape of Good Hope; with the foregoing species.

3. Hallia imbricata, *Thunb.*

Hab. Cape of Good Hope; with the two preceding species.

24. CROTALARIA, *Linn.*

1. Crotalaria Senegalensis, *Bacle.*

Crotalaria Senegalensis, Bacle, in DC. Prodr. 2, p. 133; Webb, Spicil. Gorg. in Hook. Niger Fl. p. 116.

Hab. St. Jago, Cape de Verde Islands.

2. Crotalaria microphylla, *Vahl.*

Crotalaria microphylla, Vahl, Symb. 1, p. 52; Webb, Spicil. Gorg. l. c. p. 117.

Hab. With the preceding. (The form named *C. trigonelloides* by Mr. Webb.)

3. Crotalaria stipularia, *Desv.*

Crotalaria stipularia, Desv. Jour. Bot. 2, p. 76; DC. Prodr. 2, p. 124.
C. sagittalis, Velloz. Fl. Flum. 7, t. 111, non Linn.

Hab. Rio Janeiro, Brazil. (In flower only.)

4. Crotalaria striata, *DC.*

Crotalaria striata, DC. l. c.; Benth. in Lond. Jour. Bot. 2, p. 586, & Pl. Jungh. p. 207.

Hab. Rio Janeiro. Probably introduced into Brazil from Africa or the East Indies.

5. Crotalaria vitellina, *Ker.*

Crotalaria vitellina, Ker. Bot. Reg. t. 447; DC. Prodr. 2, p. 132.

Hab. Rio Janeiro, Brazil.

The Brazilian collection contains an imperfect and indeterminable specimen of another species, of the same group as *C. vitellina.*

6. Crotalaria incana, *Linn.*

Crotalaria incana, Linn.; DC. Prodr. 2, p. 132; Benth. in Lond. Jour. Bot. 2, p. 587.

Hab. Peru, in the immediate vicinity of Callao.

7. Crotalaria verrucosa, *Linn.*

Crotalaria verrucosa, Linn.; DC. Prodr. 2, p. 125; Benth. in Lond. Jour. Bot. 2, p. 560; Wight, Ic. Pl. Ind. Or. t. 200.

Hab. Tahiti, Society Islands; "common in some places near the coast:" doubtless introduced; perhaps recently, as it is not mentioned in Guillemin's Zephyritis Taitensis. Baños, near Manilla, Luzon.

8. Crotalaria fulva, *Roxb.*

Crotalaria fulva, Roxb. Fl. Ind. 3, p. 266; Wight & Arn. Prodr. Fl. Ind. Or. 1, p. 183.

Hab. Singapore.

9. Crotalaria calycina, *Schrank.*

Crotalaria calycina, Schrank, Pl. Rar. Hort. Monac. t. 12; Benth. l. c. p. 564.
C. Roxburghiana, DC. Prodr. 2, p. 129.
C. anthylloides, Don, Prodr. Fl. Nep. p. 241; Wight & Arn. Prodr. Fl. Ind. Or. 1, p. 181.

Hab. Caldera, Mindanao, one of the Philippine Islands.

10. Crotalaria sessiliflora, *Linn.*

Crotalaria sessiliflora, Linn.; Benth. in Lond. Jour. Bot. 2, p. 555.
C. anthylloides, Lam. Dict. 2, p. 195, ex Benth. l. c.

Hab. Luzon; on Mount Majaijai.

11. Crotalaria quinquefolia, *Linn.*

Hab. Feejee Islands. "Emboa." "Probably introduced."

25. LUPINUS, *Tourn.*

1. Lupinus microcarpus, *Sims.*

Lupinus microcarpus, Sims, Bot. Mag. t. 2413; Agardh, Syn. Gen. Lup. p. 2.

Hab. Chili, near Valparaiso. (A form less hairy than usual.)

2. Lupinus Lindleyanus, *Agardh.*

Lupinus Lindleyanus, Agardh, Syn. Gen. Lup. p. 9.

Hab. Peru, below Obrajillo.

A dwarf form of the species, a span to a foot high, more hirsute than usual, or villous with long and spreading hairs, some of them on the upper face of the leaflets. The flowers are said to be "pale blue, with a white carina."

3. Lupinus nubigenus, *Kunth.*

Lupinus nubigenus, Kunth, Pl. Legum. p. 174, t. 50; H. B. K. Nov. Gen. & Spec. 6, p. 480; Hook. Bot. Misc. 2, p. 217; Agardh, l. c. p. 21.

Hab. Andes of Peru, above Baños. (In flower only.)

Our specimens are identical with Hooker's plant, above-cited, which was gathered in the same district by Mr. Cruckshanks. They accord so nearly with specimens from Antisana that I cannot but refer them to Kunth's *L. nubigenus:* but the stem is more developed, often a span high; the short-pedunculate, very thick and dense, cylindrical flowering spike is from 5 to 7 inches long; the upper lip of the calyx is very deeply two-cleft, the lower tridenticulate, or more decidedly three-toothed at the apex. Still the plant is not large enough to agree with the character of *L. alopecuroides*, and the ovary is only four-ovuled. The leaflets, from 9 to 11 in number, are an inch and a half in length. "Flowers light blue."

4. Lupinus tomentosus, *DC.*

Lupinus tomentosus, DC. Prodr. 2, p. 409; Agardh, Syn. Gen. Lup. p. 34, ex char.

Hab. Baños and Culnai, Andes of Peru. Also collected by Mr. M'Lean. (Nearly allied to the next.)

5. Lupinus paniculatus, *Desv.*

Lupinus paniculatus, Desv. in Lam. Dict. 3, p. 625; Agardh, Syn. Gen. Lup. p. 35.

Hab. Obrajillo and Baños, Andes of Peru.

6. Lupinus prostratus, *Agardh.*

Lupinus prostratus, Agardh, Syn. Gen. Lup. p. 39.

Hab. Culnai to Casa-cancha, in the high *pampas* or pasture region of the Andes of Peru. (In fruit only.) It was collected by Mr. Mathews in the same district.

7. Lupinus Pickeringii, Sp. Nov.

L. suffruticulosus, depressus, undique sericeus; caulibus brevissimis; petiolis gracilibus foliolis 5–7 *oblanceolatis stipulisque multoties longioribus; pedunculis recurvis apice capitato-plurifloris; calyce subsessili ebracteolato, labio superiore bipartito, inferiore integro.*

Hab. Baños and Culnai, in the high Andes of Peru.

A dwarf and *depressed*, multicipital species, *silky all over* with a rather hirsute appressed pubescence; the *very short stems suffruticose* and thickish, branching directly from the crown of the long and deep root, cæspitose-crowded, only 2 or 3 inches long. *Leaflets* 5 *to* 7, *oblanceolate*, hirsute-silky both sides, only 3 to 5 lines long, *very much* *shorter than the slender petioles;* which are from an inch to 2 inches in length. *Stipules short,* adnate to the base of the petiole, triangular-subulate. *Peduncles recurved* or procumbent, thickish, naked, an inch long, bearing 8 to 12 *flowers in a head,* composed of 2 or 3 closely approximate verticils, at length forming a short spike. Bracts shorter than the flowers, lanceolate, acute, deciduous. *Calyx subsessile, not bracteolate,* densely silky-hirsute; the *upper lip two-parted, the lower entire.* Corolla 3 lines long; the colour not manifest. Ovary hirsute, three-ovuled. Fruit not seen.—The species belongs to Agardh's tribe *Microphylli.*

8. Lupinus Crueckshanksii, Sp. Nov.

L. nanus e radice perenni? gracili, subacaulis, crinito-hirsutissimus; foliolis 7–11 lineari-lanceolatis superne nunc glabratis petiolo multo brevioribus; spica pluriflora foliis breviore; calyce ebracteolato, labio superiore bipartito, inferiore tridenticulato.

Hab. Alpamarca; high Andes of Peru. (Cerro Pasco, Cruckshanks, in herb. Hook.)

A *dwarf and nearly stemless* species, 3 inches high, from a simple and *tapering, probably perennial root,* all over *very hirsute with long and shaggy* fulvous hairs. Petioles about an inch and a half in length; with the broad and acuminate-awned stipules adnate to their base. *Leaflets* 7 *to* 11, *linear-lanceolate,* 6 to 8 lines long, *much shorter than the petioles, their upper surface becoming glabrate* with age. Peduncle (in flower) very short. *Spike many-flowered,* about an inch long, rather dense, *shorter than the leaves.* Flowers subsessile, half an inch long, exceeding the ovate and acuminate-awned bracts. The corolla is said to be "purplish" in Mr. Cruckshanks' specimen. *Calyx not bracteolate,* hirsute; the *upper lip two-parted, the lower tridenticulate,* or truncate. Ovary linear, hirsute, with 3 or 4 ovules. Fruit not seen.

9. Lupinus Termis, *Forsk.?*

Hab. Puen Buen, New South Wales. In fruit only. Doubtless introduced from Europe.

26. ASPALATHUS, *Linn.*

1. Aspalathus chenopoda, *Linn.*

Aspalathus chenopoda, Linn. Spec. Pl. p. 711; Benth. in Lond. Jour. Bot. 7, p. 610.

Hab. Cape of Good Hope, near Cape Town.

2. Aspalathus spicata, *Thunb.*

Hab. Cape of Good Hope; very abundant near Cape Town.

3. Aspalathus canescens, *Linn.*

Aspalathus canescens, Linn. Mant. p. 262; Benth. in Lond. Jour. Bot. 7, p. 625.

Hab. With the preceding species.

4. Aspalathus spinosa, *Linn.*

Hab. With the preceding species; very common.

5. Aspalathus acuminata, *Lam.*

Aspalathus acuminata, Lam. Dict. 1, p. 287; Benth. in Lond. Jour. Bot. 7, p. 650.

Hab. With the preceding.

6. Aspalathus microphylla, *DC.*

Aspalathus microphylla, DC. Prodr. 2, p. 143; Benth. in Lond. Jour. Bot. l. c.

Hab. With the preceding.

7. Aspalathus galioides, *Linn.*

Aspalathus galioides, Linn. Mant. p. 260; Benth. in Lond. Jour. Bot. 7, p. 647.

Hab. Cape of Good Hope, with the preceding.

8. Aspalathus uniflora, *Linn.*

Aspalathus uniflora, Linn. ex Benth. in Lond. Jour. Bot. l. c. p. 613.
A. cymbæformis, DC. Prodr. 2, p. 140.

Hab. With the preceding.

9. Aspalathus capillaris, *Benth.*

Aspalathus capillaris, Benth. in Hook. Lond. Jour. Bot. 7. p. 653.
Ononis capillaris, Thunb. Fl. Cap. p. 585; DC. Prodr. 2, p. 166.

Hab. Cape of Good Hope, in the vicinity of Cape Town.

27. ULEX, *Linn.*

1. Ulex Europæus, *Linn.*

Hab. St. Helena: introduced, without doubt, from Europe.

28. SPARTIUM, *Linn., DC.*

1. Spartium junceum, *Linn.*

Hab. Peru: introduced from Europe. "Abundantly naturalized from Callao to Obrajillo."

29. SAROTHAMNUS, *Wimm.*

1. SAROTHAMNUS SCOPARIUS, *Wimm.*

Spartium scoparium, Linn. Spec. Pl. ed. 2, p. 996; Fl. Dan. t. 313; Schk. Handb. t. 196.
Cytisus scoparius, Link; DC. Prodr. 2, p. 154.

HAB. Corral, and on the summit of the Pico Ruivo, Madeira.—The common *Broom*.

30. GENISTA, *Linn.*, *Lam.*

1. GENISTA (TELINE) MADERENSIS, *Webb.*

Genista Maderensis, Webb, ex Lemann, Cat. Pl. Mader. in Hook. Niger Fl. p. 79.
Teline Maderensis, Webb & Berth. Phyt. Canar. 2, p. 37.

HAB. Madeira; on mountains northeast of Funchal. (Very closely resembling *G. candicans*.)

2. GENISTA VIRGATA, *DC.*

Genista virgata, DC. Prodr. 2, p. 149.
Spartium virgatum, Ait. Hort. Kew, 3, p. 11.
Cytisus tener, Jacq. Ic. Rar. t. 147.

HAB. Madeira; on dry rocks, near Corral, &c.

3. GENISTA CUMINGII, *Hook. & Arn.*

Genista Cumingii, Hook. & Arn. Bot. Misc. 3, p. 178; Gay, Fl. Chil. 2, p. 56.

HAB. Andes of Chili, above Santiago; where it is very common.

4. Genista Gayana.

Genista umbellata, Clos, in Gay, Fl. Chil. 2, p. 56, non Poir.

Hab. High Andes of Chili, above Santiago, near the line of perpetual snow.

Our specimens accord with the character of the *G. umbellata* of the Flora Chilena, the name of which must be changed, as it is borne by a much older species; nor is that name appropriate for a plant which has solitary and sessile flowers. It forms dense tufts, only a few inches high; the stems imbricated throughout with the sheathing bases of the small, trifid, rigid, and spinescent leaves. The pod is ovate-lenticular, about three lines long, very smooth and shining, one-seeded.

31. MEDICAGO, *Linn.*

1. Medicago sativa, *Linn.*

Hab. Rio Negro, North Patagonia: undoubtedly introduced from Europe.

2. Medicago lupulina, *Linn.*

Hab. Chili; between Valparaiso and Santiago: doubtless introduced.

3. Medicago denticulata, *Willd.*

Hab. Rio Negro, North Patagonia: introduced with cattle. Now pretty widely diffused through all the temperate regions of the New World that were colonized from the south of Europe.

32. MELILOTUS, *Tourn.*

1. Melilotus parviflora, *Desf.*

Hab. Rio Negro, North Patagonia. Obrajillo, Peru. Introduced from Europe. Now abundant in all the temperate and subtropical parts of the New World that were colonized by Portugal and Spain.

33. TRIFOLIUM, *Tourn.*

1. Trifolium fragiferum, *Linn.*

Hab. Madeira; on the coast east of Funchal.

2. Trifolium filiforme, *Linn.*

Hab. Bay of Islands, New Zealand. Probably of recent and slight introduction, as it is not mentioned by Dr. Hooker, in his Flora of New Zealand.

3. Trifolium Peruvianum, *Vogel.*

Trifolium Peruvianum, Vogel, in Reliq. Meyen. p. 12.

Hab. Near Baños, Andes of Peru.

4. Trifolium Matthewsii, Sp. Nov.

T. laxe hirsutum; caulibus procumbentibus; foliolis obovato-cuneatis retusis argute serratis glabratis; stipulis membranaceis scariosis;

pedunculis folio triplo longioribus; floribus plurimis in umbellam congestis denique reflexis; dentibus calycis villosuli subulato-acuminatis tubo longioribus; legumine pilosulo trispermo.

Hab. Near Obrajillo, Andes of Peru. (Chachapoyas, Matthews, in herb. Hook.)

A species belonging, like the foregoing, to the group of which *T. repens* is the type, most allied apparently to *T. obcordatum*, Desv., of Buenos Ayres (to which probably belongs *T. polymorphum* of Seringe, in DC., if not of Poiret); but it has narrower and barely *retuse*, not obcordate, and *sharply serrulate, obovate-wedgeform leaflets.* From *T. Peruvianum* it is abundantly distinguished by its *many-flowered, umbelliform heads*, nearly as large as those of *T. repens, on peduncles of thrice the length of the leaves* (from 5 to 7 inches long), and by its elongated *procumbent stems*, a foot or more in length, and perhaps creeping. All the plant is softly and *loosely hirsute;* the leaflets however at length *glabrate*, or their upper surface glabrous. Petioles an inch and a half in length. *Stipules membranaceous, acuminate*, 4 or 5 lines long. *Pedicels reflexed after anthesis*, a line and a half in length. Flowers 4 or 5 lines long. *Calyx sparsely hairy;* the *subulate-acuminate teeth* longer than the tube, nearly equal, shorter than the scarious-persistent corolla. *Legume* oblong, sessile, very obtuse at both ends, *sparingly and minutely pubescent, three-seeded*, as long as the persistent corolla. Seeds nearly orbicular, flat.

34. LOTUS, *Linn.*

1. Lotus glaucus, *Ait.*

Hab. Madeira; very common on the coast, near Funchal.

2. Lotus angustissimus, *Linn.*, var.

Lotus divaricatus, Soland. in Herb. Banks, ex Lemann, non Boiss.

Hab. Madeira; at Santa Anna.

3. Lotus uliginosus, *Schkuhr?*

Hab. Madeira, in company with the preceding species.

4. Lotus corniculatus, *Linn.*

Hab. Hunter's River, New South Wales. (The Australian form of the species, which appears not to differ essentially from the European plant.)

5. Lotus Fraseri, *Benth. ined.*

Hab. Hunter's River, New South Wales.

The flowers are scarlet, according to the late Mr. Fraser (in herb. Benth.), who long since collected this still unpublished species, in the same region.

6. Lotus Candolleanus, *Sweet.*

Lotus Candolleanus, Sweet, ex Steud. Nomencl. Bot. ed. 2.
L. australis, *β. angustifoliola*, DC. Prodr. 2, p. 212.

Hab. Puen Buen, New South Wales.

35. HOSACKIA, *Dougl.*

1. Hosackia Macræi, *Benth.*

Hosackia Macræi, Benth. in Bot. Reg. sub. t. 1257.
Lotus (*Microlotus*) *Macræi*, Benth. in Linn. Trans. 17, p. 367.

Hab. Chili: in ravines and on hills, around Valparaiso.

36. DALEA, *Linn.*

1. Dalea Onobrychis, *DC.*

Dalea Onobrychis, DC. Prodr. 2, p. 247.

Hab. Andes of Peru, below Obrajillo: a pubescent form of the plant.

Both this and the nearly allied *D. Mutisii*, Kunth, were gathered by Matthews in the province of Chachapoyas, Peru. I cannot clearly distinguish the two species, except by the calyx. *D. Mutisii* has the plumose-villous and subulate-aristiform teeth of the calyx longer than the glabrous tube. In *D. Onobrychis*, the subulate teeth of the calyx are shorter than the equally villous tube.

2. Dalea cylindrica, *Hook.*

Dalea cylindrica, Hook. Bot. Misc. 2, p. 213.

Hab. Obrajillo, Andes of Peru.

Described by Hooker from more developed specimens than ours, with elongated spikes, gathered by Mr. Cruckshanks in the same district, "Valley of Canta." Mr. M'Lean, however, found it with spikes only an inch long, like those of our plant. Mr. Matthews likewise collected it at Purrochuca.

37. PSORALEA, *Linn.*

* *Maderenses.*

1. Psoralea dentata, *DC.*

Psoralea dentata, DC. Prodr. 2, p. 221.
P. Americana, Linn. Spec. Pl. ed. 2, p. 1075; Jacq. Hort. Schœnb. t. 227.

Hab. Madeira; on the coast at Funchal.—Not a native of America, wherefore the Linnæan name was changed by DeCandolle.

2. Psoralea bituminosa, *Linn.*

Hab. With the preceding species.

* * *Capenses.*

3. Psoralea pinnata, *Linn.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

4. Psoralea aphylla, *Linn.*

Hab. With the preceding species.

5. Psoralea decumbens, *Ait.*

Hab. With the preceding species.

* * * *Australianæ.*

6. Psoralea patens, *Lindl.*

Psoralea patens, Lindl. in Mitch. Exped. Austral. & Ann. Sci. Nat. ser. 2, 15, p. 59.

Hab. Hunter's River, New South Wales. Also gathered by Fraser in the interior of New Holland.

7. Psoralea tenax, *Lindl. l. c.*

Hab. Hunter's River and Puen Buen, New South Wales.

* * * * *Austro-Americanæ.*

8. Psoralea glandulosa, *Linn.*

Hab. Valparaiso; in valleys near the coast.—"A shrub, from 6 to 10 feet high."

9. Psoralea pubescens, *Balb.*

Psoralea pubescens, Balb. in Pers. Ench. 2, p. 347; DC. Prodr. 2, p. 220.

Hab. Peru: below Obrajillo; rare.—"A coarse, shrubby plant, about 6 feet high." This has been gathered above Lima by Matthews, and near Loxa by Seemann. The specimens agree well with the cultivated plant, which was doubtless of Peruvian origin. *P. lasiostachys*, Vogel, Rel. Meyen. p. 13, so far as can be judged from the character, would seem to be hardly distinct from this species.

38. INDIGOFERA, *Linn.*

1. Indigofera tinctoria, *Linn.*

Hab. St. Jago, Cape de Verde Islands. Caldera, Mindanao, Philippine Islands.

2. Indigofera anil, *Linn.*

Hab. Brazil, around Rio Janeiro; common. Tahiti, Society Islands: "evidently introduced." Sandwich Islands; on the hills behind Honolulu, Oahu.

3. Indigofera Truxillensis, *H. B. K.*

Indigofera Truxillensis, H. B. K. Nov. Gen. & Spec. 6, p. 456

Hab. Peru: in the dry bed of the river near Callao.

4. INDIGOFERA OBRAJILLENSIS, Sp. Nov.

I. herbacea, cinereo-strigosa; caule decumbente; foliis pinnatis; foliolis 6–8-jugis obovatis oblongisve mucronatis utrinque canescenti-strigosis supra subglabratis; racemis breviter pedunculatis folio brevioribus; mucrone antherarum nudo; legumine deflexo lineari recto canescenti-puberulo.

HAB. Obrajillo, Peru; abundant. (Also gathered by Mr. M'Lean.)

Apparently an *herbaceous* perennial, *cinereous* throughout with the close *strigose* pubescence of the related species. *Stems decumbent* or spreading, a foot or more in length. Stipules subulate-awned, 5 lines long, or the lower broader and shorter, brownish, strigose-pubescent externally, rather persistent. *Leaves pinnate*, very short-petioled. *Leaflets* 6 *to* 8 *pairs, obovate or oblong*, from 4 to 8 lines in length and about 3 lines wide, *mucronate*, some of them rather conspicuously so, *canescently strigose* both sides, at least when young, the *upper surface* becoming more or less *glabrate* with age, veinless, slightly petiolulate. Peduncles (half an inch to an inch or rather more in length), with the short and dense spike or *raceme, shorter than the leaf.* Pedicels less than half a line long. Bracts subulate, as long as the calyx. Calyx strigose-hirsute; the lobes subulate-acuminate, longer than the tube. "Corolla scarlet, showy:" vexillum 4 or 5 lines long, a little hairy outside. *Anthers* uniform, strongly mucronate; the *mucro naked* (not bearing a tuft of short bristles). *Legume deflexed, linear*, an inch and a half long, *straight, canescently puberulent*, pointed, turgid, several-seeded.

Our specimens are in flower only: the fruit is described from a plant in the Hookerian herbarium, gathered by Mr. M'Lean. The species is manifestly allied to *I. tephrosioides*, H. B. K.; but the leaflets are broader, strigose-canescent both sides, and destitute of the fine parallel veins which are delineated in Kunth's figure of that species, nor have they a long and awn-like mucronation; the peduncles are shorter; and there is no trace of a tuft of bristles surmounting the cusp of the anthers. It needs, however, to be more critically compared with that species.

5. Indigofera viscosa, *Lam.*

Indigofera viscosa, Lam. Dict. 3, p. 247; DC. Prodr. 2, 227; Webb. Spicil. Gorg. p. 121.
I. glutinosa, Perr. in DC. l. c. non Vahl.

Hab. St. Jago, Cape de Verde Islands: very abundant in dry places.

6. Indigofera linearis, *DC.*

Hab. Cape de Verde Islands; with the preceding species.

7. Indigofera australis, *Willd.*

Hab. Hunter's River, New South Wales.—A large form: also what appears to be a much smaller and more slender variety: both in fruit only.

8. Indigofera adesmiæfolia, Sp. Nov.

I. fruticosa, ramosissima, glabra; foliis pinnatis; rhachi complanata articulata; foliis 6–7-jugis parvis obovatis emarginatis vel fere obcordatis; pedunculis paucifloris; legumine lineari recto tetragono pleiospermo.

Hab. Hunter's River, New South Wales.

A *shrubby* plant, apparently erect, *very much branched, glabrous* throughout or very nearly so; the branches slender. Stipules minute and deciduous. *Leaves pinnate*, with 6 *or* 7 *pairs of obovate, emarginate, nearly obcordate leaflets*, which are only a line or a line and a half in length, of a thickish texture, smooth on both sides. Petiole and *rhachis flattened* and somewhat dilated, an inch and a half long; *articulated* at the insertion of the leaflets, where it is apparently nodose-glandular. *Peduncles* mostly shorter than the leaves, apparently *few-*

flowered: but the specimen bears ripe fruit only. *Legume linear, straight, four-sided*, an inch long, glabrous, *several-*(9–10-)*seeded*.

I have not seen this remarkable species in any other collection, nor do I know any with which it may be particularly compared.

9. Indigofera filiformis, *Thunb.*

Hab. Cape of Good Hope, in the vicinity of Cape Town.

10. Indigofera coriacea, *Ait.*

Hab. Cape of Good Hope; with the foregoing species.

39. GLYCYRRHIZA, *Tourn.*

1. Glycyrrhiza astragalina, *Gillies.*

G. foliolis oblongo-linearibus; racemis laxifloris folia superantibus; legumine inermi lævi subglanduloso pseudo-lomentaceo moniliformi; seminibus fere globosis.

Glycyrhiza astragalina, Gillies, in Hook. Bot. Misc. 3, p. 183.

Hab. Rio Negro, North Patagonia; common. (Also gathered at Port Desire, by Mr. Darwin and Captain Middleton; Port St. Helena, Captain King; and Bahia Blanca, Mr. Tweedie; specimens of the latter, like our own, with fruit.)

Roots or creeping rootstocks with the taste of Liquorice. Stems a span to a foot high, branching, and, like the whole plant, minutely glutinous-glandular, otherwise glabrous. Stipules subulate, deciduous. *Leaflets* 9 to 13, *oblong-linear*, retuse and mucronulate, thickish, 6 to 10 lines long. *Racemes loosely-flowered*, peduncled, *usually exceeding the leaves.* Calyx campanulate, rather gibbous. "Corolla purple," resembling that of the other species, 3 lines long. Stamens diadelphous. Ovules usually 3. *Legume smooth, minutely glandular, moniliform*, so constricted between the joints as to appear *lomentaceous*, commonly linear, and of three turgid, one-seeded joints, when it is 8 or 10 lines long, sometimes shortened and of one or two joints, not in the least prickly or hispid, tardily if at all dehiscent. *Seeds subglobose*, with a small hilum.

The fruit of this plant has not before been described. Its lomentaceous form is peculiar, and the seeds are nearly spherical;—characters, however, insufficient to separate it from *Glycyrhiza*, of which it is the sole known representative in the southern hemisphere.

40. TEPHROSIA, *Pers.*

1. Tephrosia bracteolata. *Guill. & Perr.*

Tephrosia bracteolata, Guill. & Perr. Fl. Seneg. p. 194; Webb. Spic. Gorg. p. 121.

Hab. St. Jago, Cape de Verde Islands. (A diminutive specimen.)

2. Tephrosia piscatoria, *Pers.*

Tephrosia piscatoria, Pers. Ench. 2, p. 329; DC. Prodr. 2, p. 252; Guill. Zeph. Tait. p. 62.
Galega littoralis, Forst. Prodr. Fl. Ins. Austr. p. 52, non Linn.

Hab. Sandwich, Society, Samoan, Tonga, Feejee, and Coral Islands: "intrusive." Also Luzon, near Manilla.

3. Tephrosia hirta, *Hamilt.*

Tephrosia hirta, Hamilt. in Trans. Linn. Soc. 13, p. 546?

Hab. Singapore.

4. Tephrosia Baueri, *Benth. ined.*

T. herbacea, glabella; caulibus decumbentibus; stipulis aristato-subulatis; foliolis 3–4-jugis lato-linearibus obtusissimis mucronatis basi acutiusculis subtus striguloso-puberulis; racemis paucifloris folio sublongioribus; legumine lineari puberulo apice arcuato-incurvo.

Hab. Hunter's River, New South Wales. (New South Wales, Ferd. Bauer.)

A low, *herbaceous* species, *almost glabrous;* with branching, ascending or *decumbent stems* from a perennial root; the younger parts more or less puberulent. *Stipules subulate-awned*, 2 lines long, persistent. *Leaflets 7 or 9, broadly linear*, 7 to 12 lines long and about 2 lines wide, *very obtuse, mucronate, acutish at the base*, glabrous above, minutely *strigose-puberulent underneath;* the straight veins not conspicuous. *Racemes few-flowered, rather exceeding the leaves;* the flowers scattered. Calyx-teeth subulate-setaceous. *Legume linear*, an inch and a half long, 2 lines wide, *incurved towards the apex*, compressed, 8–10-seeded, puberulent.

5. Tephrosia Capensis, *Pers.*

Hab. Cape of Good Hope, in the vicinity of Cape Town.

41. AGATI, *Rheede.*

1. Agati grandiflora, *Desv.*

Hab. Oahu, Sandwich Islands. "Cultivated, but not naturalized."

The *A. coccinea*, now considered to be no more than a variety of *A. grandiflora*, seems not to have been met with at the Society Islands, where it was originally collected by Forster.

2. Agati tomentosa, *Nutt. in Herb. Hook.* (Tab. 46.)

A. sericeo-tomentosa, demum glabrescens; caulibus reclinatis; foliolis 8–12-jugis supra glabris; calyce cyathiformi; leguminibus teretiusculis torulosis folia æquantibus apice longe rostratis.

Sesbania tomentosa, Hook. & Arn. Bot. Beech. Voy. p. 286, excl. loco natali.

Hab. Sandwich Islands. District of Waianae, Oahu. Coast of Hawaii, east of the crater Lua Pele. Also collected, principally on Oahu, by Lay and Collie, Douglas, Gaudichaud, Nuttall, &c.

A woody plant, with *decumbent* stems, "from 15 to 20 feet in length;" the branches, foliage, &c., *silky-tomentose* when young, but *glabrate with age*. Leaves abruptly pinnate, from 4 to 7 inches long, very short-petioled. *Leaflets* 8 *to* 12 *pairs*, oblong-elliptical, from 7 to 14 lines long, 3 or 4 lines wide, pale, minutely black-dotted and *glabrous above*, minutely silky-pubescent underneath even when old, retuse, usually more decidedly mucronate than those of *A. grandiflora*, otherwise very similar, except as to the pubescence; the rhachis pubescent. Stipules minute, caducous. Inflorescence as in *A. grandiflora:* the peduncles short, about three-flowered. Pedicels half an inch to an inch long, mostly longer than the peduncle. Bracts and bractlets minute, caducous. Flowers one-third or less than half the size of those of *A. grandiflora*, and with a proportionally shorter *cyathiform calyx*, which, like the pedicels, &c., is minutely silky-pubescent; the broad teeth subulate-pointed. Corolla "yellow or red, as brightly coloured as in *A. grandiflora;*" the moderately falcate carina and alæ from an inch to an inch and a quarter long: vexillum orbicular, emarginate, reflexed, when spread out little shorter than the carina. Stamens and pistil nearly as in *A. grandiflora*. *Legume nearly terete*, at least when mature, although compressed when young, 5 or 6 inches long, 1½ to 2 lines wide, glabrous, usually *torulose*, and occasionally constricted at intervals, slightly stipitate in the nearly persistent calyx, *conspicuously rostrately pointed*, multilocellate, deflexed, *as long as the leaves*. Seeds from 8 to 20, oblong, compressed, shining.

This is a manifest congener of *Agati grandiflora;* but the abbreviated calyx leaves scarcely any positive character to distinguish the genus from *Sesbania.* The specimen described by Hooker and Arnott, in the Botany of Beechey's Voyage, as from Acapulco, was doubtless collected at the Sandwich Islands, and accidentally misplaced among Mexican plants.

PLATE 46.—AGATI TOMENTOSA: a branch, in flower and with young fruit, of the natural size. Fig. 1. A corolla, displayed, somewhat enlarged. 2. Stamens and pistil, more magnified. 3. The calyx and pistil, magnified. 4. Mature pods, of the natural size. 5. Part of one of the valves of the pod, with the seeds in place. 6. Embryo, enlarged.

42. SWAINSONA, *Salisb.*

1. SWAINSONA GALEGIFOLIA, *R. Br.*

Swainsona galegifolia, R. Brown, in Ait. Hort. Kew. ed. 2, 4, p. 326; DC. Prodr. 2, p. 271.

HAB. Hunter's River, New South Wales. (In flower.)

2. SWAINSONA CORONILLÆFOLIA, *Salisb.*

Swainsona coronillæfolia, Salisb. Parad. Lond. no. 28; Sims, Bot. Mag. t. 1725.

HAB. Hunter's River, New South Wales. (In flower and with fruit.)

3. SWAINSONA MICROPHYLLA, Sp. Nov.

S. glabella, suffruticulosa; foliolis 6–12-jugis obcordato-cuneatis; racemis multifloris folia superantibus; leguminibus deflexis ovoideis coriaceis glabris estipitatis rostro brevi abrupto incurvo apiculatis.

HAB. In the district of Hunter's River, and Puen Buen, New South Wales.

Plant a span or more in height, *almost glabrous* to the naked eye, under a lens minutely strigose-puberulent. *Stems a little woody at the base*, slender, erect, branched. Stipules subulate, minute. Leaves pinnate. *Leaflets* 6 *to* 12 *pairs*, *obcordate*, or *cuneate*, and deeply emarginate, from a line to a line and a half (seldom 2 lines) in length. *Racemes longer than the leaves*, 5 or 6 inches long in fruit, including the peduncle, *many-flowered*. Flowers only 3 lines long. Pedicel recurved, longer than the bract, shorter than the nearly glabrous calyx; the teeth of the latter much shorter than the tube. Vexillum not callose. Ovary nearly glabrous. *Legume ovoid*, *deflexed glabrous*, *coriaceous* in texture, very turgid, 5 lines long, sessile in the calyx (*not stipitate*), *abruptly pointed with a short incurved beak*, few-seeded.

4. SWAINSONA MONTICOLA, *Benth. ined.*

HAB. Near Puen Buen, New South Wales.

This is the *Lessertia monticola* of Richard Cunningham's collection, and is an undescribed *Swainsona*. Our collection does not furnish adequate materials for characterizing it.

43. CARMICHÆLIA, *R. Br.*

1. CARMICHÆLIA AUSTRALIS, *R. Br.*

Carmichælia australis, R. Brown, in Bot. Reg. t. 92; Hook. f. Fl. N. Zeal. p. 50.
C. Cunninghamii, Raoul, Pl. N. Zel. p. 29, t. 28, B.
Bossiæa scolopendria, A. Rich. Bot. Voy. Astrolab. p. 346, non R. Brown.
Lotus arboreus, Forst. Prodr. Fl. Ins. Austr. p. 52.

HAB. Bay of Islands, New Zealand. (In fruit only: the var. *grandiflora*, Hook. f.)

44. ASTRAGALUS, *Linn., Benth.*

Astragalus & Phaca, Linn. (excl. sp.), DC., Endl., etc.

1. Astragalus distans, Sp. Nov.

A. cinereo-pubescens; radice annua; caulibus a basi ramosis gracilibus; stipulis parvis a petiolo liberis inter se subconnatis; foliolis 9–13 angustissime linearibus obtusis; pedunculo folium superante laxe multifloro; dentibus calycis subulatis tubo paullo brevioribus; corolla ochroleuca; legumine deflexo ovoideo-oblongo cinereo-pubescente apice acuto incurvo polyspermo uniloculari, suturis utrisque leviter introflexis.

Var.? *β. legumine majore recto, suturis vix intrusis.*

Hab. Rio Negro, North Patagonia; on sand-hills.

Root annual. Stems branched from the base, slender, diffusely spreading or ascending, a foot or more in length, flexuous, *cinereous,* as is the whole plant, with a fine strigulose pubescence. *Stipules small,* scarious, ovate-subulate, *free from the petiole, more or less united with each other* on the opposite side of the stem. Leaves 1½ to 2 inches long, including the short petiole. *Leaflets* 9 *to* 13, *very narrowly linear,* half an inch to an inch long and only half a line wide, plane, or the margins involute when young, *obtuse,* the upper surface becoming almost glabrous with age. *Peduncles* axillary, *exceeding the leaves,* 2 or 3 inches long, bearing a *loose, many-flowered,* spike-like raceme, of an inch or two in length. Pedicels shorter than the calyx, recurved, as long as the subulate bractlets. Flowers 3 or 4 lines long. *Calyx* oblong-campanulate, hirsute-pubescent with whitish and a few brownish hairs; its *subulate teeth rather shorter than the tube,* about half the length of the apparently *yellowish-white corolla. Legume deflexed, ovoid-oblong,* not more than 5 lines long, 2 lines wide, nearly terete, abruptly *acute,* not at all stipitate nor tapering at the base, *cinereous-pubescent* like the stems, more or less *incurved at the* *apex, many-seeded, one-celled,* but with *both sutures projecting* a little into the cell; the dorsal one not externally appearing introflexed, but the section shows a distinct infolding of the coriaceous endocarp.

The specimens of the variety, if such it be, are in advanced fruit, and show the root. Their stems, foliage, &c., are similar to those of the species to which it is annexed, only rather more glabrate. But the *legumes* are *larger,* from 5 to 7 lines long, and *straight* or nearly so, less pointed; the *sutures very slightly introflexed;* but the projection of the dorsal one is still observable. Additional specimens are requisite to determine whether they belong to a distinct species.

Specimens of a nearly allied species, if not the very same, exist in the Hookerian herbarium, from Uruguay. This adds another to the numerous species, of various sections, which so invalidate the distinction between *Phaca* and *Astragalus* as to compel their union, although the vast number of known species would render the separation extremely desirable, if that were longer possible. Mr. Bentham has already combined the two genera in his as yet unpublished account of the Indian *Astragali;* and I have followed his example in the second part of Plantæ Wrightianæ.

2. ASTRAGALUS (PHACA) OCHROLEUCUS.

Phaca ochroleuca, Hook. & Arn. Bot. Misc. 3, p. 186; Gay, Fl. Chil. 2, p. 95.

HAB. Chili, near Valparaiso. (In fruit only.)

3. ASTRAGALUS (PHACA) CANESCENS.

Phaca canescens, Hook. & Arn. Bot. Misc. 3, p. 185; Gay, Fl. Chil. 2, p. 105.

HAB. Chili; with the preceding. (Without flowers or fruit.)

This specific name may be retained, since the *A. canescens* of Solander, published by Mr. Lowe, has been ascertained by Mr. Webb to be identical with *A. brachyceras,* Ledeb., and no more than a variety of *A. hamosus.*

4. ASTRAGALUS PROCUMBENS, *Hook. & Arn. l. c.*

HAB. Chili; with the preceding species. (Without flowers or fruit.)

5. ASTRAGALUS GARBANCILLO, *Cav.*

Astragalus Garbancillo, Cav. Ic. Pl. 1, t. 85; DC. Prodr. 2, p. 283; Hook. Bot. Misc. 2, p. 214.

HAB. High Andes of Peru, at Baños; abundant. (In flower, without fruit.)

The stems are herbaceous, and the calyx black with a dark pubescence, as in Cruckshanks' plant, described by Hooker: but the leaflets are not bidentate, and seldom even retuse. Except in being less hairy, it seems not distinct from *A. unifultus*, L'Her. If I rightly identify the plant, the flowers are said in Dr. Pickering's notes to be cream-colour.

6. ASTRAGALUS (PHACA) RICHII, Sp. Nov.

A. *hirsuto-canescens, humilis; caulibus e basi suffrutescente adscendentibus; stipulis oppositifoliis coalitis; foliolis* 15–21 *oblongo-linearibus; pedunculo folium adæquante; spica brevi pauciflora; dentibus calycis nigro-hirsuti subulatis tubo æquilongis; legumine ovoideo chartaceo inflato glabello acumine subincurvo apiculato uniloculari polyspermo. suturis haud intrusis.*

HAB. Andes of Peru, below Obrajillo.

A *low, canescently hirsute* plant, with many slender *stems, ascending from a slightly woody base*, a span or less in height. *Stipules united opposite the leaf*, small. Leaves about an inch and a half long, including the short petiole. *Leaflets 15 to 21, oblong-linear* or linear, mostly obtuse, 3 lines long, both sides clothed, like the stems, with whitish hirsute pubescence. *Peduncle as long as the leaf*, bearing a close and *short spike*, of from 6 to 12 flowers. Pedicels much shorter than the calyx, about the length of the subulate bracts. *Calyx clothed with black hairs, the subulate teeth as long as the* campanulate *tube.* Corolla probably purple or white, 3 lines long. *Legume ovoid, inflated, of a papery texture,* half an inch in length, 3 or 4 lines in transverse diameter, narrower in the direction of the sutures, *nearly glabrous,* under a lens sparsely and minutely hairy, closely sessile in the calyx, *pointed, the acumination somewhat incurved, many-seeded, strictly one-celled; the sutures not projecting* into the cavity of the cell.

7. ASTRAGALUS PICKERINGII, Sp. Nov.

A. multiceps, subacaulis, depressus; stipulis vaginantibus imbricatis; foliis cano-villosis; foliolis 19–23 *obovato-oblongis emarginatis; pedunculo petiolo breviore capitatim* 3–4*-floro; calycis dentibus triangulari-subulatis æqualibus tubo cylindraceo dimidio brevioribus; ovario tomentoso substipitato quinque-ovulato.*

HAB. High Andes of Peru, between Casa Cancha and Culnai. (Also Cerro Pasco, Matthews.)

A *depressed, and multicipital, nearly stemless* species; the caudexes or short stems cæspitose, an inch or two in length, from a perennial or somewhat lignescent root, clothed with the *sheathing stipules,* which are closely imbricated on the upper, leafy portion. The stipules are scarious, 2 or 3 lines long, more or less silky-villous, united on the side opposite the leaf almost to their summits, and behind the petiole to a less extent, inclosing the base of the latter, with which it is adnate only at the very base. *Leaves canescently villous,* as are the peduncles, calyx, &c., 1½ to 2 inches long, including the petiole of about one-third the length. *Leaflets* 19 *to* 23, *obovate-oblong and emarginate,* or almost obcordate, silky-villous both sides, somewhat complicate, 2 or 3 lines long, approximate, but not closely compacted. *Flowers* 3 *or* 4 *together in a kind of head,* on a *peduncle shorter than the petiole,* which is at first nearly included in the stipular sheaths, at length exserted to the length of 3 or 4 lines: the separate flowers fully half an inch long, nearly sessile, subtended by ovate and membranaceous bracts of scarcely one-fourth their length. *Calyx cylin-*

draceous, more than half the length of the (purplish?) corolla, silky with white and a few dark hairs; the *teeth subulate-triangular, equal, only half the length of the tube. Ovary tomentose*, elongated-oblong, one-celled, but with some introflexion of the dorsal suture, *short-stipitate, about five-ovuled*. Fruit not seen.

Although allied to *A. geminiflorus* of Humboldt and Bonpland, from the Quitensian Andes, this species is distinguished by its proportionally larger leaves, with less crowded, broader, and emarginate leaflets; its flowers three or four together, and raised on a short but manifest peduncle; its longer and regularly five-toothed calyx, &c. The number of ovules in that species is not mentioned.

8. Astragalus Brackenridgei, Sp. Nov.

A. subacaulis vel procumbens; stipulis vaginantibus ramorum novellorum imbricatis; foliis canescenti-villosis; foliolis 21–27 *oblongis obtusis supra glabellis; spica* 6–10-*flora breviter pedunculata petiolum adæquante; calycis nigro-pubescentis dentibus subulatis tubo campanulato subæquilongis; legumine ovoideo-triangulari apiculato dorso sulcato biloculari, loculis monospermis.*

Hab. High Andes of Peru, near Baños.

Plant with the same aspect and mode of growth as the preceding species, unless that the caudexes or short *procumbent stems* are more elongated (the proper root not seen): these are apparently numerous in a crowded tuft, and are terminated by a dense cluster of the leafy shoots of the season, which are about an inch in length, and *imbricated with sheathing stipules*, like those of the foregoing species. *Leaves canescently villous* with finer and more spreading hairs, 1½ to 2 inches long, including the petiole. *Leaflets* 21 to 27, narrowly *oblong, obtuse, smoothish above*, mostly conduplicate, 2 to 3 lines long, not very crowded. *Flowers* 6 *to* 10, *in a spike, on a short but distinct peduncle*, together about *the length of the petiole. Calyx blackish-pubescent*, a line and a half in length, subtended by a shorter and similarly pubescent bract; its broadly *subulate teeth nearly as long as the campanulate tube*. Corolla apparently purple or white, 3 lines long. Ovary silky-pubescent, 2–3-ovuled. *Legume triangular-ovoid*, closely sessile in the calyx, 3 lines long, *deeply grooved on the dorsal side*, thence appearing somewhat didymous, not grooved on the ventral face, *minutely pointed*, slightly pubescent, completely *two-celled* by the introflexion of the dorsal suture; the *cells one-seeded*. Seeds large for the size of the cell.

The much smaller flowers with a shorter calyx, and the entire leaflets, at once distinguish this species from the foregoing, which probably bears a different fruit.

9. ASTRAGALUS ALPAMARCÆ, Sp. Nov.

A. pygmæus, cæspitoso-acaulis; stipulis vaginantibus; foliis confertissimis minimis; foliolis 11–21 *ovalibus emarginatis obcordatisve villosulis seu glabellis; floribus solitariis binisve sessilibus; calycis dentibus triangulato-subulatis tubo campanulato paullo brevioribus; ovario biloculari, loculis uniovulatis.*

HAB. Near Alpamarca, on the high Andes of Peru.

A very *dwarf, densely cæspitose, and stemless* species, forming a matted tuft, only an inch or two in height, from lignescent caudexes; the condensed branches covered with the smoothish *sheathing stipules*, and with *densely crowded, minute leaves;* the latter only a quarter or half an inch in length, including the petiole. *Leaflets* 11 *to* 21, *oval and notched at the apex, or obcordate*, from half a line to scarcely a line in length, of a rather fleshy texture, conduplicate, the upper surface mostly glabrous, the lower *more or less villous* with loose hairs, or some of them *glabrate*. *Flowers solitary or in pairs, sessile* or nearly so at the end of the branches, small. *Calyx-tube campanulate*, a line and a half long, sparsely hairy, *rather longer than the triangular-subulate-teeth;* the latter spreading. "Corolla blue," according to Dr. Pickering's notes: vexillum fully twice the length of the calyx, rounded-obovate, retuse, very large in proportion to the other petals. Stamens diadelphous from the middle downwards. *Ovary two-celled*, silky-villous, with a *single ovule in each cell*. Fruit not seen.—An imperfect specimen, from the same habitat, has larger and less congested leaves, and is perhaps a more developed state of the species.

This species is closely allied to *A. uniflorus*, DC. and *A. geminiflorus*, Humb. & Bonpl.; but is much smaller in all its parts, has different leaflets, &c. It appears to be equally distinct from the *A. Peruvianus*, *A. minimus*, and *A. pusillus* of Vogel, which are described as having the tube of the calyx three or four times the length of the teeth.

10. Astragalus alienus, Sp. Nov.

A. humilis, fruticulosus, multiceps, cinereo-pubescens; stipulis vaginantibus; foliis confertis; petiolis induratis persistentibus; foliolis multijugis ellipticis retusis; floribus geminis subsessilibus; calycis dentibus tubo oblongo-campanulato subdimidio brevioribus; ovario quinqueovulato uniloculari.

Hab. High Andes of Peru; on the summit of the ridge at Baños; rare.

Plant *low* (3 or 4 inches high), rigid, *fruticulose*, scarcely caulescent; the thick and woody root dividing into a tuft of caudex-like branches, which below are beset with the persistent stipules, above thickly armed with spinescent and persistent *indurated petioles*, from which the leaflets have fallen. *Leaves crowded, cinereous-pubescent*, an inch long. *Stipules sheathing*, much less united on the petiolar side, where they are adnate to the base of the petiole only, but united on the opposite side nearly to their apex, pubescent like the leaves. *Leaflets in many pairs* (12 to 15), *elliptical, retuse*, usually complicate, about a line and a half in length, the upper surface less pubescent. *Flowers in pairs* at the apex of the stem, or in the upper axils, *almost sessile*, half an inch long. *Calyx oblong-campanulate*, pubescent with short dark-coloured hairs; the triangular-subulate *teeth nearly half the length of the tube*. Corolla twice the length of the calyx, probably purple. *Ovary* oblong-linear, silky-villous, *one-celled, five-ovuled*, somewhat stipitate. Legume unknown.

This would appear to belong to the same group as several of the foregoing species; but it exhibits the spinescent persistent stipules of the *Tragacanthæ*,—in which respect it is unlike any other known species of the New World.

45. VICIA, *Linn.*

1. Vicia Selloi, *Vogel.*

Vicia Selloi, Vogel, in Linnæa, 13, p. 33; Walp. Repert. 1, p. 717.

Hab. Banks of the Rio Negro, North Patagonia.

This is without doubt the plant described by Vogel under this name. Perhaps it is not distinct from *V. graminea* of Smith (a species omitted in DeCandolle's Prodromus): but that is said to have three pairs of leaflets and very small flowers.

2. Vicia nigricans, *Hook. & Arn.*

Vicia nigricans, Hook. & Arn. Bot. Beech. Voy. 1, p. 20, & Bot. Misc. 3, p. 195.

Hab. Chili, near Valparaiso.

3. Vicia bidentata, *Hook.*

Vicia bidentata, Hook. Bot. Misc. 2, p. 215.
V. depauperata, Clos, in Gay, Fl. Chil. 2, p. 132?

Hab. Peru, near Callao; among grass, in rather dry places. "Flowers blue."

4. Vicia Matthewsii, Sp. Nov.

V. parce molliter pubescens; caulibus debilibus; foliolis 6–12 *anguste oblongis venosis obtusissimis vel truncato-retusis mucronulatis; stipulis semisagittatis lobatis; pedunculis quadrifloris folium æquantibus; calycis dentibus subulatis tubo æquilongis, superioribus parum minoribus; leguminibus glabris.*

Hab. Andes of Peru, near Baños and Obrajillo. (Chachapoyas and Purruchuca, Andes of Peru, Matthews.)

A low and slender species, with *weak stems, sparsely and softly pubescent* throughout, or the foliage at length glabrate. *Leaflets* 6 *to* 12, *narrowly oblong* or elliptical, varying to linear, from 7 to 10 lines long, 2½ to 4 lines wide, of a thin and membranaceous texture, copiously *veiny, very obtuse or mostly truncate* and slightly *retuse, mucronulate.* Tendrils commonly pinnate; the lowest pair close to the stipules. *Stipules semisagittate,* or the upper broader and semicordate, sharply and incisely *lobed* or 2–3-cleft, 2 or 3 lines long, persistent. *Peduncles* about 2 inches long, *equalling the leaf*, pubescent, *four-flowered.* Flowers about half an inch in length, recurved, on pedicels of barely a line in length. *Calyx* campanulate, pubescent, or else glabrate with age, almost equally five-cleft; the *subulate teeth as long as the tube*, the two *upper ones slightly smaller.* Corolla apparently purple. Ovary linear, somewhat stipitate, glabrous or nearly glabrous. Style densely bearded from the apex nearly to the middle. Immature *legume glabrous*, somewhat sabre-shaped, fully an inch long.

This can hardly pass into *V. Andicola*, H. B. K.; which has much narrower and strongly mucronate leaflets, entire and narrower stipules, the style bearded at the summit only, and larger pods.

5. Vicia Menziesii, *Spreng.*

V. glabella; caulibus angulatis prælongis; stipulis superioribus semisagittatis acuminatis, inferioribus flabellatis pectinato-dentatis, dentibus longe subulatis; foliolis 8–12 (*magnis*) *ovato-oblongis obtusis membranaceis; pedunculis folio brevioribus apice plurifloris; floribus* (*maximis*) *purpurascentibus longiuscule pedicellatis; calycis dentibus acutissime subulatis tubo æquilongis.*

Vicia Menziesii, Spreng. Syst. Veg. 3, p. 267.
V. grandiflora, Smith, in Rees' Cycl. no. 7, non Scop.

Hab. Hawaii, Sandwich Islands: in forests of Mouna Kea: without flowers or fruit. (Discovered by Menzies, on Mouna Loa, at the upper edge of the forest: also gathered by Macrae, on Mouna Kea; in flower.)

A *nearly glabrous* species, of most remarkable size. *Stems* elongated, "climbing, tangled among shrubs," *angled*, minutely pubescent or glabrous, very leafy. *Stipules* foliaceous, *pectinately dentate with long and subulate teeth*, especially *the lower* ones, which are rounded or *flabellate* and half an inch or more in diameter; the *upper half-sagittate and acuminate*. *Leaflets* 8 *to* 12, often 2 inches in length, *ovate-oblong*, *obtuse*, *membranaceous*, veiny, mucronulate, commonly alternate; the lowest near the stem. Tendrils compound. *Peduncles shorter than the leaves*, 2 or 3 inches long, 6–9-*flowered;* the *pedicels slender*, approximate, 3 to 5 lines long. *Flowers very large*, from an inch to an inch and a half in length, *pale purple*. *Calyx-teeth as long as the tube*, 3 lines long, narrow, very *acutely subulate*, the lower one a little longer than the others. Vexillum recurved, ecallose. Style filiform, minutely pubescent all round above the middle. Stigma terminal, minute. Legume unknown.

This is much the largest-flowered species of the genus known; and the leaflets are proportionally ample. The character and description, as to the flowers, are entirely drawn from a specimen gathered by the late Mr. Macrae. The species is omitted in DeCandolle's Prodromus.

46. LATHYRUS, *Linn.*

1. LATHYRUS SESSILIFOLIUS, *Hook. & Arn.*

Lathyrus sessilifolius, Hook. & Arn. Bot. Beech. Voy. p. 20, & Bot. Misc. 3, p. 197.
L. epetiolaris, Clos, in Gay, Fl. Chil. 2, p. 146.

HAB. Chili: in ravines near Valparaiso.

This name has the priority in publication, I believe, over the homonymous *L. sessilifolius* of Tenore.

2. Lathyrus sericeus, *Lam.*

Lathyrus sericeus, Lam. Dict. 2, p. 708; DC. Prodr. 2, p. 369?
L. tomentosus, Vogel, in Linnæa, 13, p. 24, an Lam.?

Hab. Rio Negro, North Patagonia; where it is very abundant.

Without doubt this is the *L. sericeus* of Lamarck, who described a small and undeveloped state of the plant. Vogel has completed the character, under the name of *L. tomentosus;* and perhaps the plant so named by Lamarck is a less silky and somewhat scandent state of the same species, with longer leaflets and smaller stipules. The latter vary greatly in size, sometimes nearly equalling the leaflets (which are from half an inch to an inch in length), and always much exceeding the petiole. The tendril is mostly short and simple. The linear, very silky-tomentose pods are nearly 2 inches long. The flowers are said to be "light blue."

3. Lathyrus pubescens, *Hook. & Arn.*

Lathyrus pubescens, Hook. & Arn. Bot. Beech. Voy. p. 21, & Bot. Misc. 3, p. 198; Gay, Fl. Chil. 2, p. 148.

Hab. Andes of Peru, near Obrajillo.

Less pubescent than Chilian specimens; but in other respects nearly the same. It was likewise gathered by Mr. Matthews, in Peru; where Mr. M'Lean also collected what appears to be a nearly glabrous form of the same species, with broader leaflets.

47. ORMOCARPUM, *Beauv.*

1. Ormocarpum sennoides, *DC.*

Ormocarpum sennoides, DC. Prodr. 2, p. 315; Wight, Ic. Pl. Ind. Or. t. 297.

Hab. Feejee Islands; on the leeward coasts. (In flower only.)

48. CHÆTOCALYX, *DC.*

1. Chætocalyx longiflorus, *Benth.*

Chætocalyx longiflorus, Benth. ined. in Herb. Imp. Vindob.

Hab. Brazil, in the vicinity of Rio Janeiro.

A miserable specimen, in flower only, and insufficient for characterizing the species. The leaflets appear to be only five, rather smaller than those of *C. Vincentina*, and somewhat pubescent on both sides. The calyx has a truncate orifice (as in the second section of Vogel's *Rhadinocarpus*), bearing the setaceous teeth, which are almost as long as the campanulate tube.

49. PHYLACIUM, *Bennett.*

1. Phylacium bracteosum, *Bennett.*

Phylacium bracteosum, Bennett, Pl. Jav. Rar. p. 159, t. 33.

Hab. Majaijai Mountains, Luzon, Philippine Islands.

50. ZORNIA, *Gmelin.*

1. Zornia angustifolia, *Smith.*

Zornia angustifolia, Smith, in Rees' Cycl.; DC. Prodr. 2, p. 316; Webb, Spicil. Gorg. in Hook. Niger Fl. p. 121.
Hedysarum diphyllum, var. α. Linn. Syst. excl. syn.

Hab. St. Jago, Cape de Verde Islands.—An Oriental species, now widely diffused.

2. Zornia reticulata, *Smith.*

Zornia reticulata, Smith, l. c; DC. Prodr. 2, p. 216.
Hedysarum diphyllum, var. β. Linn.; Swartz, Obs. Bot. p. 28.

Hab. Brazil, in the vicinity of Rio Janeiro.

These two species, together constituting the *Hedysarum diphyllum* of Linnæus, are probably to be reunited, under the name of *Z. diphylla*, Pers., as is done by Vogel, and recently by Bentham (in Kew Jour. Bot. 4, p. 45). One belongs to the Old, the other to the New World; but the characters that distinguish them are not of much value.

51. STYLOSANTHES, *Linn.*

1. Stylosanthes viscosa, *Swartz.*

Hab. Brazil, around Rio Janeiro; where it is very common.

2. Stylosanthes Guianensis, *Swartz.*

Hab. Brazil; with the preceding species.

52. ARACHIS, *Linn.*

1. Arachis hypogæa, *Linn.*

Hab. Singapore: probably escaped from cultivation.—It is uncertain whether the *Pea-nut* is a native of Africa or of Equinoctial America. Mr. Bentham inclines to the latter opinion, adducing the fact that the other known species of the genus, five in number, are all Brazilian.

53. ADESMIA, *DC.*

1. Adesmia filipes, Sp. Nov.

A. annua; caulibus e basi ramosis gracilibus erectis glandulosis; stipulis subulatis; foliolis 5–6-jugis minimis ovalibus utrinque sericeo-cinereis; racemis terminalibus elongatis sparsifloris; pedicellis filiformibus erectis flore longioribus sæpius hispidulo-glandulosis; calyce pubescente, lobis lineari-subulatis tubo longioribus; lomento 5–6-articulato setis plumosis confertis villosissimo.

Hab. Rio Negro, North Patagonia; on sand-hills.

Root *annual*. *Stems branched from the base, erect*, from a span to a foot high, very *slender, hispidulous-glandular* and viscid, also minutely pubescent. *Stipules subulate*, small, nearly distinct. Leaves abruptly pinnate, an inch or more in length, including the petiole; the latter sparsely and slightly hispidulous-glandular. *Leaflets 5 or 6 pairs, very small*, from a line to a line and a half in length, *oval*, obtuse, not mucronate, *grayish with a silky pubescence both sides*. *Racemes terminal, elongated* (from 2 to 6 inches long), *sparsely flowered*. Bracts very minute, persistent. *Pedicels filiform, erect*, from 5 to 8 lines long, sparingly and minutely *glandular-hispidulous*. Flowers 3 lines long. *Calyx pubescent*, not glandular, half the length of the corolla; the *lobes linear-subulate, longer than the tube*, rather blunt. Corolla yellow; the carina and wings nearly equalling the vexillum, which is glabrous, except a sparse and minute pubescence on the outside near the summit. Stamens as in the genus. Style filiform, elongated. *Loment* straight, linear, *of 5 or 6 joints*, each a line and a half in diameter, *villous with the long plumose bristles* which thickly beset their faces.

2. Adesmia hispidula, *DC.*

Adesmia hispidula, DC. Prodr. 2, p. 319, & Mem. Legum. p. 307, t. 48.

Var. *β.* subnuda: *articulis lomenti medio setis nudis disco brevioribus echinulatis rariusve inermibus; foliolis retusis.*

Var. γ. PLUMOSA: *articulis lomenti (infimo excepto) setis elongatis vere plumosis crinitis; foliolis retusis.*

HAB. Obrajillo, Andes of Peru: both varieties.

These are, I believe, two extreme forms of the species which DeCandolle has illustrated; one of them having only very short and glabrous setæ on the joints of the pod, and even these sometimes obsolete; the other having the copious setæ elongated and conspicuously plumose. The leaflets in both are retuse. A specimen in the Hookerian herbarium, gathered by Matthews, No. 540, connects our var. γ. with the original form of the species.

3. ADESMIA BALSAMICA, *Bert.*

Adesmia balsamica, Bertero, in Mem. Turin. 39, p. 59, t. 10; Hook. & Arn. Bot. Beech. Voy. p. 20, & Bot. Misc. 3, p. 192; Gay, Fl. Chil. 2, p. 180.
Mimosa balsamica, Molina, Hist. Chil.

HAB. Valparaiso, Chili.

The foliage and branchlets are covered with glands, which yield an agreeable aromatic balsam.

4. ADESMIA MICROPHYLLA, *Hook. & Arn.*

Adesmia microphylla, Hook. & Arn. Bot. Beech. Voy. p. 19, t. 9; Lodd. Bot. Cab. t. 1962.

HAB. Valparaiso, Chili; abundant on hills near the sea.

5. ADESMIA HORRIDA, *Gillies.*

Adesmia horrida, Gillies in Hook. Bot. Misc. 3, p. 191; Gay, Fl. Chil. 2, p. 204.

HAB. Andes of Chili, above Santiago. (Branches without flowers or fruit.)

Adesmia Echinus of Presl, Symb. Bot. 2, p. 14, t. 61, is probably only a form of *A. horrida*, with the loment reduced to a single joint.

6. ADESMIA TRIJUGA, *Gillies*.

Adesmia trijuga, Gillies; Hook. & Arn. Bot. Misc. 3, p. 191; Gay, Fl. Chil. 2, p. 200.

HAB. High Andes of Chili: on La Dessa, above Santiago, near the snow-line. (In fruit: a form with rather large leaflets.)

54. STREPTODESMIA, Nov. Gen.

Calyx persistens, quinquenervis, quinquefidus, tubo campanulato, laciniis subæqualibus. Corolla Adesmiæ, *sed emarcida persistens. Stamina* (10, *libera*) Adesmiæ. *Ovarium* 4–6-*ovulatum: stylus filiformis, adscendens. Lomentum corolla marcescente inclusum, sutura carinali excisum,* 3–6-*articulatum; articulis subglobosis, a sutura vexillari continua filiformi stylifera mox contorta persistente secedentibus, bivalvibus, monospermis, valvulis lævibus membranaceis. Semina subglobosa.*—*Suffrutex intricato-ramosissimus, canescens; ramulis spinescentibus; foliis abrupte pinnatis paucijugis; racemis paniculatis brevibus, rhachi spinescente persistente; corolla lutea.*

1. STREPTODESMIA CANESCENS, Sp. Nov. (Tab. 47.)

HAB. Rio Negro, North Patagonia; on sand-hills; common.

A rigid, *shrubby* plant, a foot or two in height, *canescent* with a fine and close silky pubescence, *intricately much branched; the branchlets spinescent*, slender, glabrate. Stipules minute, silky. *Leaves abruptly pinnate*, or perhaps sometimes with a terminal leaflet, half an inch long, including the petiole, often fascicled on short spurs. *Leaflets* 3 *pairs*, or sometimes 2 or 4 pairs, crowded, oblong or oval, acutish or obtuse, not retuse, minute (a line or a line and a half in length), thickish, finely silky-canescent both sides. Flowers crowded in *short panicled racemes* at the summit of the branches; the rhachis persistent and terminating in a spinescent point. Bracts minute. Pedicels slender, 3 to 6 lines long, often longer than the nodding flowers. Bractlets none. *Calyx persistent*, canescently pubescent, 3 lines long, *five-cleft* to the middle; the *tube campanulate*, or at first somewhat turbinate, *five-nerved;* the nerves thickened and extending to the apex of the linear-subulate, *nearly equal lobes* (the two upper ones slightly exceeding the others). *Corolla yellow, marcescently persistent*, a little exceeding the lobes of the calyx, incurved in the manner of *Adesmia:* vexillum dilated-obovate, complicate, at length upwardly spreading, glabrous, marked with a puberulent spot near the summit of the claw on the inner side: alæ cuneate-oblong, oblique, nearly equalling the vexillum in length, the lamina minutely bearded on the lower edge near the base: carina obtuse, incurved, its petals bearded on the lower edge up to the point of junction. *Stamens* 10, abruptly incurved above the middle: *filaments distinct*, or slightly coalescent at the base, flattened, in 2 series: anthers uniform, oval. *Ovary* linear, flattish, minutely pubescent, containing from 4 *to* 6 *ovules*. *Style filiform*, elongated, geniculate, *ascending:* stigma minute, terminal, naked. *Loment included in the marcescent corolla*, and partly covered by the calyx, irregularly or at length spirally *twisted*, of 3 to 6 puberulent, turgid, or *globular joints, which separate at maturity* from each other and *from the continuous, filiform, persistent ventral suture:* the latter coils spirally or assumes a zigzag form, and is tipped with the deflexed persistent style: the *joints* are promptly *two-valved, one-seeded;* the *valves membranaceous, even*, and destitute of reticulations, or very nearly so. *Seeds globular*, obscurely kidney-shaped, smooth. Embryo incurved: cotyledons very thick.

Mr. Brown and Mr. Bennett* have called attention to "the variety and singularity of the modes adopted in the different subdivisions of the Linnæan genus *Hedysarum* for the protection of the pod and its contents, during their progress to maturity." To the various modes which they have enumerated the present plant affords a curious addition; the protection being here afforded by the persistence of the corolla, as well as the calyx, until the seeds are matured and shed, and the retention of the pod within its enclosure by the twisting or spiral coiling of the semi-replum, instead of the alternate flexion of the loment observed in *Smithia*[*] and *Lourea*. These peculiarities, along with the separation of the globular articles from the persistent semi-replum at maturity, and their prompt bivalvular dehiscence, will surely warrant the establishment of a distinct genus for this plant, notwithstanding its close resemblance to *Adesmia* in other respects.

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* Horsfield, Plantæ Javanicæ Rariores, p. 157.

The name, compounded of στρεπτὸς, *twisted*, and δέσμα, *a bond*, is expressive of a characteristic of the fruit.

PLATE 47.—STREPTODESMIA CANESCENS: a branch, of the natural size. Fig. 1. A portion of the inflorescence, with mature fruit, enclosed by the persistent calyx and corolla. 2. Calyx. 3. Corolla displayed. 4. Stamens and pistil. 5. Pistil. 6. An immature loment. 7. A mature loment. 8. A mature loment, with the articles separating from the persistent and twisted ventral suture. 9. A seed. 10. Longitudinal section of the same.—The details variously enlarged.

55. ÆSCHYNOMENE, *Linn.*

1. ÆSCHYNOMENE RUDIS, *Benth.*

Æschynomene rudis, Benth. Pl. Hartweg. p. 116, no. 649.

HAB. "Rio Janeiro, Brazil," according to the ticket: but, perhaps, from Peru, where alone this species has hitherto been found; the original specimens having been gathered near Lima by Cuming, and at Guayaquil by Hartweg.

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[*] It may here be noted that *Smithia spicata*, Spreng. Neue Entd. 2, p. 160, truly belongs to that genus, as now received by Bentham (in Pl. Jungh.): it is a species of his section *Kotschya* (genus *Kotschya*, Endl.), nearly allied to the *S. strigosa* from Madagascar, and with flowers of about the same size, the fructiferous calyx not more than 3 lines in length. The lobes of the latter are, however, very obtuse; the bractlets oblong-falcate and barely acute, approximate to the reflexed calyx; the spikes rather shorter than the leaves; and the rigid leaflets fully as long as those of *S. Kotschyi*, but narrower. The original specimens in the herbarium of Professor Torrey (from whom Sprengel received his materials) are said to have been collected in the "West Indies, probably Guadalupe," by Mr. Perrin. The plant, however, was most probably brought from Eastern Africa.

2. ÆSCHYNOMENE CILIATA, *Vogel.*

Æschynomene ciliata, Vogel, in Linnæa, 12, p. 84.

HAB. Brazil; common in the vicinity of Rio Janeiro: growing in marshes.

3. ÆSCHYNOMENE SENSITIVA, *Swartz.*

Æschynomene sensitiva, Swartz, Fl. Ind. Occ. 3, p. 1276; DC. Prodr. 3, p. 320.

HAB. Brazil; with the preceding species.

56. URARIA, *Desv.*

1. URARIA PICTA, *Desv.*

Uraria picta, Desv. Jour. Bot. 3, p. 122; Wight, Ic. Pl. Ind. Or. t. 411.
U. linearis, Hassk. Pl. Jav. Rar. p. 349, fide Benth. in Pl. Jungh. p. 213.

HAB. Near Caldera, Mindanao, one of the Philippine Islands.

2. URARIA LAGOPOIDES, *DC.*

Uraria lagopoides, DC. Prodr. 3, p. 324; Wight. Ic. Pl. Ind. Or. t. 289.
Hedysarum lagopodioides, Linn.? Forst. Prodr. Fl. Ins. Austr. p. 51.
H. lagopoides, Burm. Fl. Ind. p. 68, t. 53, f. 2.

HAB. Feejee Islands; on the leeward coast of Vanua-levu. Samoan Islands; common on Savaii, in cultivated grounds. Also near Caldera, Philippine Islands; a variety with narrowly oblong leaflets, the same as No. 1873 of Cuming's Philippine collection. Forster found it at New Caledonia.

57. DENDROLOBIUM, *Wight & Arn., Benth.*

DESMODIUM, § EUDESMODIUM, DC. Prodr. 2, p. 325, excl. sp. no. 3.
DESMODIUM, subgen. DENDROLOBIUM, Wight & Arn. Prodr. Fl. Ind. Or. 1, p. 223.
DENDROLOBIUM, Benth. in Pl. Jungh. Jav. fasc. 2, p. 215.

1. DENDROLOBIUM UMBELLATUM, *Wight & Arn. l. c.*

HAB. Small islands in the Sooloo Sea. Ovolau, Feejee Islands. Tongatabu. Manua, Upolu, and Savaii, Navigators' Islands.

"A mostly littoral shrub, 6 to 20 feet high, with white flowers."

2. DENDROLOBIUM AUSTRALE, *Benth. l. c.*

Hedysarum umbellatum, Forst. Prodr. Fl. Ins. Austr. p. 51? non Linn.
H. australe, Willd. Spec. Pl. 3, p. 1183.
Desmodium australe, DC. Prodr. 2, p. 326.

HAB. Nukulau, Feejee Islands.

The specimen, in fruit only, accords both with Willdenow's and DeCandolle's character, and has much smaller leaves than the foregoing species.

58. PHYLLODIUM, *Desv., Benth.*

1. PHYLLODIUM PULCHELLUM, *Desv.*

Phyllodium pulchellum, Desv. Jour. Bot. 3, p. 123, t. 5; Benth. in Kew Jour. Bot. 4, p. 46.

Dicerma pulchellum, DC. Mem. Legum. & Prodr. 2, p. 339; Wight, Ic. Pl. Ind. t. 418.

Hab. Philippine Islands: near Baños, Luzon.

59. DESMODIUM, *Desv., Benth.*

1. Desmodium (Sagotia) triflorum, *DC.*

Desmodium triflorum, DC. Prodr. 2, p. 334; Wight & Arn. Prodr. 1, p. 229, var. β.
D. (Sagotia) triflorum, Benth. in Pl. Jungh. 2, p. 221.
Nicolsonia reptans, Meisn. in Linnæa, 21, p. 260.
Sagotia triflora, Walp. & Duchass. in Linnæa, 23, p. 738, & Ann. Bot. 2, p. 413.

Hab. Luzon, Philippine Islands. A widely diffused tropical species.

2. Desmodium (Nicolsonia) barbatum, *Benth.*

Desmodium (Nicolsonia) barbatum, Benth. in Pl. Jungh. fasc. 2, p. 224, non Wall.
Hedysarum barbatum, Linn. Spec. Pl. ed. 2, p. 1055; Swartz, Obs. p. 287.
Nicolsonia barbata, Cayennensis, & venustula, DC. Prodr. 2, p. 325.

Hab. Rio Janeiro, Brazil.

3. Desmodium (Nicolsonia) polycarpum, *DC., Benth. l. c.*

Hab. Society Islands; Tahiti, Matia, and Eimeo: on dry hills, near the coast. Samoan Islands. Tongatabu. Feejee Islands: common at most of the stations visited, near the shores.

The copious synonymy of this widely diffused species is collated in Wight & Arnott's Prodromus, and lately corrected by Bentham, in his account of the *Leguminosæ* of Junghuhn's collection (Pl. Jungh. fasc. 2). Among the synonyms are *D. heterocarpum*, DC. (the *Hedysarum heterocarpum* of Linnæus and of Forster), *D. purpureum*, Hook. & Arn., and *D. nervosum* of Vogel.

4. DESMODIUM (NICOLSONIA) CAPITATUM, *DC.*, *Benth. l. c.*

Hedysarum capitatum, Burm. Fl. Ind. p. 167, t. 54, f. 1.
Pseudarthria capitata, Hassk. Pl. Jav. Rar. p. 390.

HAB. Baños, Luzon, Philippine Islands. (With ripe fruit.)

5. DESMODIUM (HETEROLOMA) GANGETICUM, *DC.*, *Benth. l. c.*

HAB. Luzon; with the preceding species.

6. DESMODIUM (HETEROLOMA) SANDWICENSE, *E. Meyer.*

Desmodium Sandwicense, E. Meyer, Ind. Sem. Hort. Regiomont. 1850, & in Linnæa, 24, p. 230.

HAB. Oahu, Sandwich Islands; on the hills behind Honolulu. (Also gathered by Seemann.)

This is described from specimens raised from seed, which was gathered at Oahu by Diedrichson. Our specimen is in fruit, with longer pods than is described by E. Meyer, often as much as nine-jointed. Dr. Pickering mentions a flowering specimen, which is not found in the collection. Seemann's specimen is in flower. This is the only species known from the Sandwich Islands; for *D. Chamissonis* of Vogel came from Luzon, not from Oahu, as was erroneously stated by Walpers.

7. DESMODIUM (HETEROLOMA) LIMENSE, *Hook.*

Desmodium Limense, Hook. Bot. Misc. 2, p. 215; Walp. Repert. 1, p. 743.

HAB. Callao, Peru.

Two other species are mentioned in Dr. Pickering's notes as having been found at Callao and Lima: one of them appears to be *D. Peruvianum*, Vogel, in Rel. Meyen. p. 30; but neither have been identified in the herbarium of the Expedition.

8. DESMODIUM (HETEROLOMA) INCANUM, *DC.*

Desmodium incanum & D. ancistrocarpum, DC. Prodr. 2, p. 332.

HAB. Rio Janeiro and Organ Mountains, Brazil. The typical form of the species, and likewise the *D. ancistrocarpum*, which appears to be no more than a variety.

9. DESMODIUM (HETEROLOMA) AXILLARE, *DC.*

Desmodium axillare (& D. reptans), DC. Prodr. 2, p. 333; Benth. Bot. Sulph. p. 82.

HAB. Rio Janeiro, Brazil: the var. *villosum*, Benth.

10. DESMODIUM (HETEROLOMA) OBOVATUM, *Vogel.*

Desmodium obovatum, Vogel, in Linnæa, 12, p. 106, & Rel. Meyen. p. 30.

HAB. Organ Mountains, Brazil. (Without flowers or fruit.)

11. DESMODIUM (HETEROLOMA) BRACHYPODUM, Sp. Nov.

D. erectum, glabellum; stipulis persistentibus striatis e basi ovata vel subcordata acuminatis subaristatis; foliis trifoliolatis; foliolis oblongis obtusis laxe venosis; racemo virgato terminali elongato; bracteis e basi lata subulatis deciduis; pedicellis geminis perbrevibus post anthesin deflexis; lomenti articulis 4–6 *pubero-scabris parvulis.*

HAB. Sydney and Hunter's River, New South Wales. (Port Curtis, Australia, Macgillivray, in Herb. Hook.)

A rather tall, herbaceous, apparently *erect, nearly glabrous* species of the section *Heteroloma*, division *Strobilacea*, Benth. in Pl. Jungh. Branches, &c., minutely scabrous-puberulent. *Stipules persistent, striate*, rather rigid, with a dilated *ovate or subcordate base*, contracted into an *awn-pointed acumination*, in all 4 lines long. Stipels setaceous. *Leaflets* 3, *oblong*, or ovate-oblong, very *obtuse, loosely veined*, and somewhat reticulated, chartaceo-membranaceous, 1½ to 3 inches long, glabrous and smooth above, slightly puberulent and a little paler underneath. *Racemes terminal*, at least the principal one, strict and *virgate*, at length *elongated*, the stronger ones in fruit becoming a foot or more in length; the flowers small (2 or 3 lines long), rather crowded. *Bracts subulate from a broad base*, striate like the stipules, about 3 lines long, *deciduous*. *Pedicels in pairs* under each bract, barely a line long, deflexed after anthesis, and remaining so in fruit. Calyx-lobes triangular-subulate. *Loment of* 4 *to* 6 *joints*, the upper suture slightly, the lower deeply sinuate, not stipitate; the joints obliquely oval, or at length semioval, from 1½ to 2 lines long, *scabrous-puberulent*.

12. DESMODIUM (HETEROLOMA?) GUNNIANUM, *Benth. ined.*

HAB. Near Sydney, New South Wales. (Also gathered by Mr. Backhouse, in Eastern Australia, and by Mr. Gunn in Van Diemen's Land.)

The character of the species has not yet been published by Mr. Bentham; and our specimens, having no good fruit, are insufficient.

13. DESMODIUM SCORPIURUS, *Desv.*

HAB. Tahiti, Society Islands.—Probably introduced from America.

14. DESMODIUM (CHALARIUM) TORTUOSUM, *DC.*

HAB. St. Jago, Cape de Verde Islands.—Chiefly a tropical American species.

15. Desmodium (Podocarpium) leptopus, Sp. Nov.

D. glabriusculum; foliolis ovato-lanceolatis, terminali subrhombeo acuminato; racemo laxo subsimplici; pedicellis articulo longioribus; lomento scabro-pubescente stipite longo gracili; articulis longe cuneato-semirhombeis latitudine triplo longioribus.

Desmodium (Podocarpium) leptopus, Gray, ined.; Benth. in Pl. Jungh. fasc. 2, p. 226, in adn.

Hab. Luzon, Philippine Islands; on mountains near Baños.

A slender, *nearly glabrous* species, of the section to which belongs our North American *D. acuminatum*, *D. pauciflorum*, &c. Stem with two or three scattered leaves, a foot or two in height. Stipules and bracts caducous. *Leaflets* 3, *ovate-lanceolate, or the terminal one somewhat rhomboidal, acuminate*, membranaceous, 2 or 3 inches long, scarcely paler underneath. Peduncle terminal, filiform, 6 or 8 inches long, bearing a *nearly simple and lax raceme* of few flowers. *Pedicels* in pairs, 6 to 11 lines long. Stamens monadelphous. *Loment on a filiform stipe* as long as the pedicel, of 2 *scabrous-pubescent, cuneate and semirhomboidal joints*, each nearly half an inch long and 2 lines wide.

60. ALYSICARPUS, *Necker.*

1. Alysicarpus vaginalis, *DC.*

Hab. St. Jago, Cape de Verde Islands.

61. ABRUS, *Linn.*

1. Abrus precatorius, *Linn.*

Hab. Feejee Islands, Tongatabu, Samoan, and Society Islands. Introduced.

62. NEUROCARPUM, *Desv.*

1. NEUROCARPUM CAJANIFOLIUM, *Presl.*

Neurocarpum cajanifolium, Presl, Symb. Bot. 1, p. 17, t. 9; Benth. Comm. Legum.
Lotus Fluminensis, Velloz. Fl. Flum. 7, t. 152.

HAB. Rio Janeiro, Brazil.

63. CENTROSEMA, *DC., Benth.*

1. CENTROSEMA PLUMIERI, *Benth. l. c.*

HAB. Rio Janeiro, Brazil; very common.

2. CENTROSEMA DECUMBENS, *Mart., Benth. l. c.*

HAB. Near Rio Janeiro, Brazil. (Also, like the preceding, a West Indian species.)

64. KENNEDYA, *Vent.*

1. KENNEDYA RUBICUNDA, *Vent.*

HAB. Sydney and Hunter's River, New South Wales. Also, Woolongong: a variety (in fruit only) with the leaves remarkably silky underneath.

2. KENNEDYA (ZICHYA) COCCINEA, *Vent.*

HAB. New South Wales, in the neighbourhood of Sydney.

65. HARDENBERGIA, *Benth.*

1. HARDENBERGIA OVATA, *Benth.*

Hardenbergia ovata, Benth. Pl. Hugel. p. 40, & Comm. Legum. l. c. p. 60.
Kennedya ovata, Sims, Bot. Mag. t. 2169; DC. Prodr. 2, p. 384.

HAB. Hunter's River, New South Wales. (In fruit.)

The allied *H. monophylla*, which must have been noticed in the vicinity of Sydney, does not occur in the collection.

66. LEPTOCYAMUS, *Benth.*

1. LEPTOCYAMUS MICROPHYLLUS, *Benth.*

Leptocyamus microphyllus, Benth. in Linn. Trans. 18, p. 209; Walp. Repert. 1, p. 758.

HAB. Sydney, New South Wales.

2. LEPTOCYAMUS ELONGATUS, *Benth. l. c.*

HAB. Puen Buen and Hunter's River, New South Wales.

67. GALACTIA, *P. Browne.*

1. GALACTIA HISPIDULA, *Benth.*

Galactia hispidula, Benth. in Linnæa, 22, p. 514; Walp. Ann. Syst. Bot. 2, p. 422.

HAB. Near Rio Janeiro, Brazil; "rare."

68. CLEOBULIA, *Mart.*

Char. fruct. *Legumen oblongum, plano-compressum, coriaceum, exalatum, suturis haud incrassatis. Semina* Diocleæ.

1. CLEOBULIA MULTIFLORA, *Mart.*

Cleobulia multiflora, Mart. in Herb. Bras.; Benth. Comm. Legum. l. c. p. 67.

HAB. Brazil; in the Organ Mountains, near Rio Janeiro.

The specimen bears only the fruit, which was not before known, on which account the characters are now given. The legumes appear to be essentially those of *Cratylia*, while the seeds are those of a *Dioclea*. The former are 2 or 2½ inches long, three-fourths of an inch wide, much compressed, obtuse at both ends, not stipitate, of a coriaceous texture, coated with a rusty down, two-valved, within intercepted between the seeds by a soft cellular tissue. The sutures are not perceptibly thickened, nor are there any traces of wings. Seeds 5 or 6, transverse, 3 lines long, oval, not much compressed, chestnut-brown, with darker spots, nearly the whole length of one side occupied by the linear hilum, from which the slender strophiole separates.

69. DIOCLEA, *H. B. K.*

1. DIOCLEA VIOLACEA, *Mart.*

Dioclea violacea, Mart. in Herb.; Benth. Comm. Legum. l. c. p. 69.
Dolichos altissimus, Velloz. Fl. Flum. 7, t. 134.

HAB. Hawaii, Sandwich Islands; on the coast near Hilo: also on Kauai. (Byron's Bay, Macrae.)

Probably introduced into the Sandwich Islands, as it is a native of

Brazil, although cultivated in Mauritius, &c. The pods are 3 or 4 inches long, 1½ to 2 inches wide, flat, glabrate when mature, about two-seeded, conspicuously tricarinate at the ventral suture. Seeds nearly orbicular, compressed, 9 or 10 lines in diameter, with a bony testa; the linear hilum extending more than half way round the circumference of the seed.

70. CANAVALIA, *DC.*

1. Canavalia obtusifolia, *DC.*

Canavalia obtusifolia, miniata, rosea, & rutilans, DC. Prodr. 2, p. 404, ex Benth.

Hab. On the sandy shores of Upolu, Samoan Islands, and of Ovolau, &c., Feejee Islands; common.

2. Canavalia turgida, *Graham.*

Canavalia turgida, Graham, in Wall. Cat. no. 5534.

Hab. Mangsi Islands. Feejee and Samoan Islands. Tongatabu. Tahiti: on the coast.

This species is closely allied to *C. gladiata*, and is probably only a variety of it, with somewhat turgid and short pods, of 4 or 5 inches in length and about an inch and a half in width. Dr. Wight, in his Icones Pl. Ind. Or. t. 753, figures *C. gladiata* with pods only six inches long.

3. Canavalia sericea, Sp. Nov.

C. sericeo-tomentosa; foliolis obovato-rotundis retusis supra demum glabratis subtus eximie sericeis; racemis plurifloris folia subæquantibus; calycibus glabriusculis; leguminibus tomentulosis triplo quadruplove longioribus quam latis.

HAB. Feejee Islands: found at Rewa, Ovolau, and Direction Island.

A species of *Eucanavalia*, section *Malochia;* with rather stout, procumbent or somewhat twining, softly *tomentose* stems and branches. Stipules ovate-subulate, caducous. *Leaflets rounded-obovate, retuse* or emarginate, thickish, 3 or 4 inches long, 2½ to 3½ inches broad, minutely silky pubescent, but *at length glabrate above, very silky underneath* with a thick and somewhat silvery pubescence; the petioles, inflorescence, &c., downy. *Racemes several-flowered*, short-peduncled, *nearly as long as the leaves.* Flower an inch and a half in length. *Calyx almost glabrous;* the large upper lip emarginate-two-lobed; the short lower lip three-cleft; its lobes broadly triangular, acute, of equal length. Ovary canescently tomentose. *Legume tomentulose*, oblong or oblong-linear, 3 or 4 inches long and an inch wide, straight, compressed, raised on a stipe of half an inch in length. Seeds 3 or 4.

4. CANAVALIA GALEATA, *Gaud.*

C. subpubescens, mox glabrata; foliolis ovato-ellipticis acuminatis, adultis superne vel undique glabris; racemis 3–10-floris; calycis labio superiore subbilobo recurvo, inferiore trifido, lobis lateralibus ovatis obtusis, infimo triangulato subacuto; corolla purpurea; leguminibus lineari-oblongis quadruplo longioribus quam latis.

Dolichos galeatus, Gaud. Bot. Freyc. Voy. p. 486, t. 115.
Canavalia galeata, Gaud. l. c. adn.; Vogel, in Linnæa, 10, p. 584.
C. Gaudichaudii, Endl. Syn. Fl. Ins. Austr. in Ann. Wien. Mus. 1, p. 186.

Var. *β.* PUBESCENS: *foliolis etiam adultis subtus pubescentibus.*

Canavalia pubescens, Hook. & Arn. Bot. Beech. Voy. p. 81; Vogel, in Linnæa, l. c.

HAB. Sandwich Islands: near the coast at Waianae, Oahu; also on Kauai. (Collected by Gaudichaud, Chamisso, Hinds; the pubescent variety by Gaudichaud, Chamisso, Lay & Collie, Douglas, &c.)

Stem slender, twining, the young shoots and the leaves *more or less pubescent* when young, soon *glabrate* or nearly glabrous in most cases.

Stipules minute, ovate-subulate, caducous. *Leaflets ovate-elliptical* or oblong-ovate, more or less *acuminate*, rounded at the base, membranaceous, 3 to 5 inches long, green and *glabrate both sides, or* (especially in var. β.) *pubescent underneath*, as are the partial petioles. *Racemes* 3–10-*flowered*, rather shorter than the leaves. Flowers an inch and a half long. *Upper lip of the calyx recurved* in flower, very large even for the genus, strongly emarginate or *somewhat two-lobed*, the lobes rounded; the short *lower lip three-cleft*, its *lateral lobes ovate* or triangular-ovate and *obtuse; the middle one more triangular and acutish* or acute. *Corolla purple*, apparently dark reddish-purple; the obovate and emarginate vexillum rather longer than the wings and keel. Androecium and pistil almost straight. Ovary silky-canescent, many-ovuled. *Legume linear-oblong*, 4 or 5 inches long in the specimen, an inch or more in width, straight, compressed, glabrous, when half grown minutely silky, slightly tricarinate at the ventral suture, apiculate, short-stipitate. Seeds 6 or 7.

In the dried specimens the lower lobes of the calyx often appear to be lanceolate and acute, as they are described and figured by Gaudichaud. But this is owing to the involution of their margins: when explanate they are seen to be as above described, and as in *C. pubescens*, Hook. & Arn. l. c., which is evidently no more than a downy-leaved variety of this species. These lobes are somewhat variable in shape. In the specimen from Kauai they are unusually broad and blunt, and the upper lip is more decidedly lobed; but no other difference is remarked. In Gaudichaud's figure, the flowers are represented considerably too large.—The specimen collected by Chamisso must have borne shorter pods than ordinary, as they are said by Vogel to be only two inches and a half long, and of more than half that width.

71. MUCUNA, *Adans.*

1. MUCUNA GIGANTEA, *DC.*

Mucuna gigantea, DC. Prodr. 2, p. 405; Wight, in Hook. Bot. Misc. 2, p. 357, Suppl. t. 14; Guill. Zeph. Tait. p. 65.

HAB. Feejee Islands; on Ovolau and Vanua-levu. Samoan Islands; on Tutuila, Savaii, &c., "with a stem 3 inches in diameter, spreading over the tallest trees." Hawaii, Sandwich Islands; in the district of Puna, at a watering place, near Kaimo: a form with a glabrate pod. Introduced? "Flowers green."

The *M. altissima* enumerated in Vogel's account of Chamisso's collection, in Oahu, is probably this species. That of Hooker & Arnott, in Beechey's Voyage, as to the specimens, is *Strongylodon ruber.*

2. MUCUNA URENS, *DC. l. c.*

Dolichos urens, Linn.; Jacq. Stirp. Amer. t. 182, f. 84. (Plum. Amer. t. 107.)

HAB. Hawaii, Sandwich Islands, in the district of Waimea, near the coast (in flower and fruit): probably introduced. (Also gathered by Gaudichaud, in the Voyage of the Bonite.) Tahiti, in the interior forest; where Dr. Pickering noted a species with slate sutures and oblique ridges, probably *M. urens;* but there is no such specimen in the collection.

3. MUCUNA PLATYPHYLLA, Sp. Nov.

M. fulvo-pubescens; foliolis magnis rotundis apiculatis subtus reticulatis supra mox glabris; floribus cymosis viridulis; leguminibus ovalibus plano-compressis transverse lamellosis, junioribus hispidissimis.

HAB. Ovolau and Rewa, Feejee Islands.

Plant with a stout and apparently tall-climbing, woody stem; the branches, *ample foliage*, &c., clothed throughout with a soft rusty or *fulvous pubescence.* Petioles 5 or 6 inches long. *Leaflets roundish*, 5 or 6 inches in length, the terminal one often broader than long, the lateral ones obliquely rotund-ovate, all abruptly *apiculate* with a small acumination, tomentose with rusty pubescence and conspicuously *reticulated underneath, early glabrous above.* Stipels setaceous. Peduncle axillary, shorter than the petiole, bearing many flowers in a compound cyme or a cymose cluster of short racemes. Pedicels 3 to 7 inches long. Calyx canescent, and hispid with a few scattered bristles; the lower lobe triangular-lanceolate, twice the length of the ovate and obtuse lateral ones, which are shorter than the ovate upper lip. *Corolla "green,"* as large as in *M. monosperma* (2 inches long). *Legume oval, flat,* 4 inches long and 2 inches wide, and still immature, very *hispid* with rusty and short prurient bristles, which are soon deciduous; each membranaceous valve produced at the sutures into a narrow wing-like margin, and its face strongly *lamellate with obliquely transverse and nearly straight* salient plates. Seeds apparently about 3.

72. ERYTHRINA, *Linn.*

1. ERYTHRINA MACROPHYLLA, *DC.?*

HAB. Rio Janeiro, Brazil. (Terminal leaflets only, 12 to 15 inches long.)

2. ERYTHRINA INDICA, *Lam.*

HAB. Feejee Islands. Tongatabu. Samoan and Society Islands. "Introduced, abundant: often cultivated by the natives."

3. ERYTHRINA MONOSPERMA, *Gaud.*

Erythrina monosperma, Gaud. Bot. Freyc. Voy. p. 486, t. 114; Hook. & Arn. Bot. Beech. Voy. p. 81.

HAB. Oahu, Sandwich Islands; on the Kaala Mountains, in the district of Waianae. (In fruit.)

The specific name is badly chosen, since the torose, at length dehiscent pod frequently matures two seeds, and perhaps more, as the ovary has as many as five ovules. The leaflets are for the most part dilated rhomboidal rather than ovate-reniform, as in Gaudichaud's original specimens and figure.

4. Erythrina ovalifolia, *Roxb.*

Erythrina ovalifolia, Roxb. Fl. Ind. 3, p. 254; Wight, Ic. Pl. Ind. Or. 1, t. 247.

Hab. Near Manilla, Luzon. (Foliage only.)

73. STRONGYLODON, *Vogel.*

Char. auctus. *Calyx campanulatus, truncatus seu 4–5-dentatus, dentibus obtusissimis vel obsoletis. Vexillum ovato-oblongum, acutum, demum recurvo-patentissimum, basi breviter unguiculatum et membranula inflexa appendiculatum, intus bicallosum. Alæ subfalcatæ, vexillo et carina multo minores. Carina gamopetala, falcata, rostrata, vexillo æquilonga. Stamina* 10, *diadelpha: antheræ fere uniformes. Ovarium stipitatum, uni–pauciovulatum: stylus capillaris, longissimus, stigmate subcapitato penicillato terminatum.* (*Fructus adhuc ignotus.*)—*Frutices vel suffrutices, caulibus gracilibus volubilibus scandentes, inermes, glaberrimæ; foliis pinnatim trifoliolatis stipellatis; racemis elongatis multifloris, pedicellis gracilibus ad nodos fasciculatis; floribus rubris.*

Strongylodon ruber, the typical species of this genus, is distinguished from *Erythrina* (*Micropteryx*) by its *appendiculate* and conspicuously *bicallose vexillum*, its obtusely *four-lobed calyx*, with the upper lobe notched, its *uni(–bi-)ovulate ovary*, its *setaceous stipels*, and its *voluble*, Phaseoloid habit. From *Spatholobus*, which has a similar habit, it differs in the form of the calyx, in the acute as well as appendiculate and bicallose vexillum, and in the uniovulate, long-stalked ovary. From *Mucuna* it differs in the calyx, vexillum, the uniform anthers, the stigma, ovary, &c. The fruit is still unknown. The ovary, although often uniovulate, as characterized by Vogel, I find as frequently to contain two ovules. I therefore venture to annex to the genus a plant from Luzon, of similar habit and character, except that the calyx is obscurely toothed, and the ovary contains several ovules (accumulated in the middle of the cell); the legume of which is equally unknown. If this be admissible, we shall have a genus differing from *Spatholobus* in the characters above-mentioned, from *Erythrina* (including *Micropteryx*, &c.) in the form of the corolla, in its stipels, and especially in habit, and from both in the *appendiculate and bicallose vexillum*.

1. STRONGYLODON RUBER, *Vogel*. (Tab. 48.)

S. foliolis ovatis membranaceis; racemis folio duplo longioribus; pedicellis flore æquilongis; calyce basi bibracteolato manifeste quadri-quinquedentato, dentibus obtusissimis; carina falcato-incurva; ovario uni–biovulato.

Strongylodon ruber, Vogel, in Linnæa, 10, p. 585.
Mucuna altissima, Hook. & Arn. Bot. Beech. Voy. p. 81, quoad specimen.
Harpætropis speciosus, Nutt. in Herb. Hook.

HAB. Sandwich Islands: on the Kaala Mountains behind Honolulu, Oahu: in forests on the side of Mouna Loa, Hawaii. (Also gathered by Chamisso, Macrae, Diell, Barclay, Nuttall, &c.) Ovolau. Feejee Islands: in forests.

"A woody, twining vine," with slender herbaceous branches, glabrous throughout. Stipules ovate, obtuse, striate, free, persistent. Petioles 3 or 4 inches long. *Leaves pinnately trifoliolate.* Stipels subulate-setaceous, rather persistent. *Leaflets ovate*, varying from roundish to oblong-ovate, more or less acuminate, 2½ to 5 inches long, *membranaceous* in texture, green, both sides of nearly the same hue, triplinerved, the minuter veinlets reticulated: petiolules 3 lines long, exceeding the stipels. *Racemes* axillary, at least *twice the length of the leaves*, 10 to 18 inches in length, including the peduncle, ascending; the rhachis multinodal, each node fasciculately about *three-flowered*, or rarely bearing a partial peduncle which is three-flowered at its apex, so that the raceme becomes somewhat paniculate. Bracts minute? caducous. *Pedicels* an inch long, *equalling the developed flower* in length, filiform, naked, bearing *a pair of ovate bractlets*, of about a line in length, which immediately subtend the calyx, and are early caducous. *Calyx campanulate,* 3 lines long, truncate or even, *manifestly four-toothed* with *broad and very obtuse* teeth, the upper one broader, but not otherwise larger, and emarginately two-lobed, so that the calyx appears five-toothed. *Corolla* papilionaceous, *red,* apparently bright purplish red: petals thin. *Vexillum ovate-oblong, acute,* an inch or an inch and a quarter in length, complicate and more or less recurved-falcate in the bud, at length *spreading or recurved;* the base raised on a very short claw (a line and a half long), *appendiculate* on each margin by a strongly inflexed membrane; the face *callose* as if by an adherent membrane, which is denticulate at the upper edge, and produced on each side into a free and salient auricle or lamella. *Alæ small,* less than half the length of the vexillum, the lamina obliquely obovate and falcate, very obtuse, 4 or 5 lines long, on a claw of about 3 lines long, appressed to the carina and partly adherent to its face. *Carina about the length of the vexillum, falcate and incurved,* complicate, *acuminately beaked,* unguiculate, its two *petals cohering* by their anterior edges for the whole length more or less firmly. *Stamens* 10, *diadelphous;* the tenth filament wholly distinct, not geniculate; the others united to the middle: *anthers* oblong, *similar,* or five alternate ones a little shorter and subcordate. *Ovary raised on a stipe* which is at length longer than itself and as long as the calyx, glabrous, compressed, *one-ovuled, or* more frequently *two-ovuled;* the ovules then superposed. *Style capillary,* very long, exceeding the stamens, gradually incurved with the carina: the *stigma terminal, capitellate,* and *minutely penicillate.* Legume unknown.

The specimen from the Feejee Islands, a very imperfect one, has shorter racemes and ovate-oblong leaflets. The latter, however, are said by Vogel to be "oblong" in Chamisso's specimens; while in all of ours from the Sandwich Islands they are ovate-rotund. No other difference is noted.

PLATE 48.—STRONGYLODON RUBER: portion of a flowering specimen, of the natural size. Fig. 1. A young flower-bud, with the bractlets. 2. Calyx, in anthesis. 3. Corolla displayed. 4. Stamens and pistil, displayed. 5. Pistil and its stipe; the ovary longitudinally divided, to show the ovules.—The details variously enlarged.

2. STRONGYLODON MACROBOTRYS, Sp. Nov. (Tab. 49.)

S. foliolis oblongis; racemis pendentibus? longissimis; pedicellis flore brevioribus; calyce truncato obsolete quadri–quinquedentato; carina leviter incurva; ovario quadri–sex-ovulato.

HAB. In the mountains near Baños, Luzon, Philippine Islands.

Probably a woody vine, with herbaceous and twining branchlets, glabrous throughout. There is only a short leafy branch, with the leaflets disarticulated, and a flowering raceme in the collection, unaccompanied by notes. Stipules caducous, or a depressed gland in their place. Leaves pinnately trifoliolate. Stipels setaceous, deciduous. *Leaflets oblong* or ovate-oblong, acuminate, green both sides, somewhat coriaceous in texture, triplinerved and veiny, about 4 inches long; the terminal one slightly cuneate, the others rounded at the base. *Raceme very long*, probably axillary and *pendent*, 4½ feet long, including the short peduncle, above which it bears a series of alternate, small and salient nodes, each bearing a fascicle of from 3 to 5 flowers, on pedicels of an inch and a half in length. Bracts and bractlets not seen (either caducous or obsolete). *Calyx* campanulate, *truncate*, 4 or 5 lines long, the border *obscurely* 4–5-toothed or repand. Corolla papilionaceous, reddish or purple. Vexillum ovate-oblong, acute, of a rather thickish texture, an inch and a half long, many-striate, complicate in the bud, and slightly falcate-recurved, at length expanding and spreading, at the base subunguiculate, and the margins appendiculate; the face callose and bilamellate nearly as in *S. ruber*. Alæ oblong, falcate, short-unguiculate, obtuse, nearly half the length of the vexillum, partly adherent to the base of the *falcate*, tapering-beaked, *moderately incurved carina*, which is as long as the vexillum, its two petals coherent by their anterior edge for nearly or quite their whole length. Stamens and style, as in the foregoing species. Anthers linear-oblong, uniform or nearly so. Stigma capitellate-truncate, somewhat expanded or indusiform, the margin fringed with minute hairs. Ovary puberulent, oblong, compressed, raised on a stipe as long as itself, with *from* 4 *to* 6 *ovules* crowded about the middle of the cell, probably only one or two of them fertile. Fruit unknown.

Plate 49.—Strongylodon macrobotrys: in flower, of the natural size. Fig. 1. The calyx. 2. Corolla displayed. 3. The carina. 4. Stamens and pistil, enlarged. 5. Pistil, more enlarged; the ovary divided, showing the ovules.

74. PHASEOLUS, *Linn.*

1. Phaseolus rostratus, *Wall.*

Phaseolus rostratus, Wall. Pl. Asiat. Rar. 1, p. 50, t. 63; Wight, Ic. Pl. Ind. t. 34. *P. amœnus*, Soland. ex Forst. Prodr. Ins. Austr. no. 533, abs. char.

Hab. Tahiti, Society Islands; common on the coast. Tutuila, &c., Samoan Islands. Ovolau, &c., Feejee Islands. On Diamond Hill, Oahu, Sandwich Islands. Probably introduced into the South Sea Islands.

2. Phaseolus Truxillensis, *H. B. K.*

Phaseolus Truxillensis, H. B. K. Nov. Gen. & Spec. 6, p. 451; DC. Prodr. 2, p. 391. *P. Cumingii*, Benth. Comm. Legum. (in Ann. Wien. Mus.) p. 75.

Hab. Callao, Peru: on the sea-coast. A glabrate and a villous-pubescent form.

3. Phaseolus (Strophostyles) Mungo, *Linn.*

Hab. Samoan and Feejee Islands. (Only fragments, apparently referable to this species.)

4. Phaseolus (Strophostyles) Schottii, *Benth.*

Phaseolus (Strophostyles) Schottii, Benth. Comm. Legum. in Ann. Wien. Mus. p. 75.

Hab. Organ Mountains, near Rio Janeiro, Brazil.

5. Phaseolus (Macroptilium) maritimus, *Benth.*

Phaseolus (Macroptilium) maritimus, Benth. Comm. Legum. l. c. p. 77.
Lotus maritimus, Velloz. Fl. Flum. 7, t. 133.

Hab. Near Rio Janeiro, Brazil: on the sands of the coast.

6. Phaseolus vestitus, *Hook.*

Phaseolus vestitus, Hook. Bot. Misc. 2, p. 216; Benth. Comm. Legum. l. c.

Hab. Near Callao, Peru. (Also gathered by Mr. Cuming.)

75. VIGNA, *Savi, Benth.*

1. Vigna brachystachys, *Benth.*

Vigna brachystachys, Benth. Bot. Voy. Sulph. p. 8.

Hab. Callao, Peru. A narrow-leaved variety of the species, which was also gathered by Cuming.

2. Vigna Oahuensis, *Vogel.*

Vigna Oahuensis, Vogel, in Linnæa, 10, p. 585; Walp. Repert. 1, p. 779.
Vigna villosa, Hook. & Arn. Bot. Beech. Voy. p. 81, non Savi.

Hab. Oahu, Sandwich Islands; on the Kaala Mountains (where it was likewise gathered by Chamisso, Douglas, &c.). Also on Kauai and Maui.

Our specimens are imperfect, and want the fruit: and I have not the means of properly comparing this with the related species. The upper lobe of the calyx is decidedly emarginate.

3. VIGNA SANDWICENSIS, Sp. Nov. (Tab. 50.)

V. radice tuberosa? eduli; caulibus volubilibus foliisque hirsutulo-pubentibus; stipulis stipellisque subulatis parvis; foliolis linearibus seu lineari-lanceolatis mucronulatis utrinque reticulatis; pedunculis folio brevioribus bi–quadrifloris; calycis dentibus subæquilongis, supremo ovato obtusissimo subemarginato, inferioribus 3 subulatis; carina rectiuscula; legumine elongato-lineari recto glabrato compresso.

HAB. Sandwich Islands: Hawaii, on Mouna Loa, six miles from the crater Lua Pele: Kauai, on mountains: Maui, on mountains in the western division of the island.

"*Root edible*," according to Dr. Pickering's notes; therefore probably *tuberous*. *Stems twining*, slender, retrorsely and *minutely hirsute-pubescent*, as are the petioles and peduncles; and the leaves are beset on both sides with a similar pubescence. *Stipules and stipels subulate, minute. Leaflets linear or linear-lanceolate*, 1½ to 2 inches long, and from one to 4 lines wide, acutish or obtuse, *mucronulate*, of a rather firm texture, and of the same hue both sides, rather conspicuously *reticulated* with transverse veinlets, abrupt or retuse at the base, short-petiolulate. *Peduncles shorter than the leaf*, an inch or less in length, *2–4-flowered*. Pedicels opposite in pairs, 3 or 4 lines long. Flower almost an inch in length. *Calyx deeply four-toothed*, subtended by a small deciduous bractlet; the teeth *nearly equal* in length, fully as long as the tube; the *uppermost ovate, very obtuse, or slightly emarginate; the others subulate*. Corolla "yellow or yellowish:" vexillum on a very short claw, obovate, entire, with two semilunar callosities and two short and auriculate deflexed basal appendages: alæ narrowly oblong, straightish, shorter than the carina, furnished with a spur-like appendage at the base of the lamina. *Carina straightish* or merely arcuate, as long as the vexillum, somewhat beaked; its petals partly united, similar, each with a minute inflexed auricle at the base of the lamina. Stamens diadelphous: the free filament not geniculate or appendaged at the base. Ovary hirsute, many-ovuled. Style filiform, slightly incurved, much longer than the ovary, the upper part not dilated, and only slightly flattened on the back, the vexillar face densely and strongly bearded for a considerable length below the stigma, which is lateral, but almost apical, since only a minute lamellar appendage projects beyond it. *Legume linear, elongated*, almost 3 inches long, 3 lines wide, manifestly *flattened*, *straight*, or nearly so, *glabrate*, somewhat torulose, intercepted between the seeds. These are 8 or 10 in number, oblong-oval, compressed, chestnut-brown, shining; the oblong hilum covered with an inconspicuous strophiole.

Without doubt, this well-marked species belongs to *Vigna*, as the genus is received by Mr. Bentham, notwithstanding the compressed legume and the straightish keel.

Plate 50.—Vigna Sandwicensis: of the natural size. Fig. 1. Corolla displayed. 2. Stamens and style. 3. Calyx and pistil. 4. Upper part of the style and the stigma, more magnified. 5. A seed. 6. Embryo.—The analyses more or less magnified.

4. Vigna lutea.

Dolichos luteus, Swartz, Fl. Ind. Occ. 3, p. 1246? DC. Prodr. 2, p. 398? Hook. & Arn. Bot. Beech. Voy. p. 81.
D. luteolus? Guillem. Zeph. Tait. p. 64, an Linn.?
Scytalis anomala, Vogel, Rel. Meyen. p. 33? et
Vigna anomala, Walp. Repert. 1, p. 779?

Hab. Sandwich Islands: on the shores at Oahu; and on mountains of the west part of Maui. Society Islands, at Tahiti and Eimeo; on the coast. (Probably introduced.) Mangsi Islands.

The seeds are dark chestnut-brown.—Perhaps this passes into *V. Sinensis;* but the leaflets are mostly roundish and very obtuse, especially when it grows on the sea-shore. I am doubtful whether it is the *Scytalis anomala* of Vogel, which also came from Oahu.

In the collection from Sydney, New South Wales, is a flowerless specimen, apparently of a *Vigna*, near the South African *V. hirta*, and the Australian *V. lanceolata*, but not the same. It was also gathered by Col. Mitchell.

76. DOLICHOS, *Linn., Benth.*

1. Dolichos falcatus, *Klein.*

Dolichos falcatus, Klein, in Willd. Spec. Pl. 3, p. 1047; DC. Prodr. 2, p. 398.

Hab. Shores of Laguna, at Baños, Luzon.

77. LABLAB, *Adans.*

1. Lablab vulgaris, *Savi.*

Hab. Feejee and Sandwich Islands: introduced and partially naturalized.

78. FAGELIA, *Necker.*

1. Fagelia bituminosa, *DC.*

Hab. Cape of Good Hope, in the neighbourhood of Cape Town.

79. CAJANUS, *DC.*

1. Cajanus Indicus, *Spreng.*

Cajanus Indicus, Spreng. Syst. 3, p. 248; Wight & Arn. Prodr. Ind. Or. 1, p. 256.
C. flavus & C. bicolor, DC. Prodr. 2, p. 406.

Hab. Luzon. Sandwich Islands: "cultivated." Rio Janeiro, Brazil. Introduced from India, to which the *Pigeon Pea* is indigenous.

80. RHYNCHOSIA, *Lour.*

1. Rhynchosia minima, *DC.*

Hab. St. Jago, Cape de Verde Islands. Doubtless introduced from America.

81. FLEMINGIA, *Roxb.*

1. Flemingia strobilifera, *R. Br.*

Flemingia strobilifera, R. Br. in Ait. Hort. Kew. 4, p. 350; DC. Prodr. 2, p. 351; Wight, Ic. Pl. Ind. Or. t. 267.

Hab. Philippine Islands; Luzon, near Manilla and Baños.

82. HECASTOPHYLLUM, *P. Browne, Kunth.*

1. Hecastophyllum Brownei, *Pers.*

Hab. Rio Janeiro, Brazil; common along the shores of the bay.

83. MACHÆRIUM, *Pers.*

1. Machærium angustifolium, *Vogel.*

Machærium angustifolium, Vogel, in Linnæa, 11, p. 193; Benth. Comm. Legum. in Ann. Wein. Mus. l. c. p. 33.

Hab. Rio Janeiro, Brazil. (Without flowers or fruit.)

2. MACHÆRIUM ACUTIFOLIUM, *Vogel.*

Machærium acutifolium, Vogel, in Linnæa, 11, p. 187, non Mart. in Benth. Comm. l. c.
M. muticum, Benth. Comm. Legum. l. c. p. 36.

HAB. Rio Janeiro and Organ Mountains, Brazil. (In flower.)

3. MACHÆRIUM OBLONGIFOLIUM, *Vogel.*

Machærium oblongifolium, Vogel, in Benth. Comm. Legum. l. c. p. 36.

HAB. Organ Mountains, Brazil. (In fruit.)

4. MACHÆRIUM INCORRUPTIBILE, *Benth.*

Machærium incorruptibile, Benth. Comm. Legum. l. c. p. 37.
Nissolia incorruptibile, Velloz. Fl. Flum. 7, t. 82.

HAB. Rio Janeiro, Brazil. (In fruit.)

From the account of Dr. Allemão, in the Transactions of the Vellosian Society of Rio Janeiro, as noticed by Mr. Bentham (in the Kew Journal of Botany, for September, 1853), it at length appears to be settled that the *rosewood* of the cabinet-makers is furnished by this tree and some other species of *Machærium*.

84. PONGAMIA, *Lam.*

1. PONGAMIA GLABRA, *Vent.* (Tab. 53.)

Pongamia glabra, Vent. Hort. Malm. t. 28; Wight & Arn. Prodr. Fl. Ind. Or. 1, p. 262; Wight, Ic. Pl. Ind. Or. t. 59; Benth. in Pl. Jungh. fasc. 2, p. 251.
Pongamia, Lam. Ill. Gen. t. 603, f. 1.

HAB. Feejee Islands: on the mountains of Muthuata; in flower:

Vanua-levu, &c.; in fruit. Mindanao, Philippine Islands, near Caldera.—The specimens from the Feejee Islands belong to the variety with rather narrow leaflets: in that from Caldera (in fruit only) the leaflets are broader.

PLATE 53.—PONGAMIA GLABRA: a flowering branch, from the Feejee plant. Fig. 1. Flower and pedicel. 2. Corolla displayed. 3. Stamens and pistil. 4. Pistil and ovules.—The analyses enlarged.

85. MILLETTIA, *Wight & Arn.*

MILLETTIA, Wight & Arn. Prodr. Fl. Ind. 1, p. 263; Benth. in Pl. Jungh. p. 249.

1. MILLETTIA? LUZONENSIS, Sp. Nov.

M. scandens? glabruta; foliolis 7 ovatis seu ovalibus acuminatis membranaceis supra glabris subtus glaucis; racemis axillaribus sessilibus confertifloris folio brevioribus; pedicellis solitariis vel geminis calyce truncato subæquilongis; vexillo glabro ecalloso; ovario glaberrimo.

HAB. Shores of Laguna, Baños, Luzon.

There is only a miserable flowering specimen of this plant in the collection, which, from the floral characters, must belong to *Millettia*, as the genus is defined by Mr. Bentham (in Pl. Jungh.), since the vexillum is not auriculate, and the stamens are diadelphous: but it does not accord with any described species. The plant is apparently a *climbing* or sarmentose, stout, shrubby vine, *glabrous*, except a minute pubescence on the young parts. Leaves pinnate. *Leaflets* 7, *ovate*, or nearly *oval*, *acuminate*, about 2½ inches long, pale or *glaucous underneath*, *membranaceous*. *Racemes axillary*, *shorter than the leaf*, *sessile*, being floriferous quite to the base. *Pedicels* crowded, either *single or in pairs* on the nodes of the rhachis, *about the length of the truncate calyx*, 3 lines long. Corolla 7 or 8 lines long: *vexillum glabrous*, *not callose* at the base, not auricled, oval or roundish. Carina very obtuse; the apex incurved. *Ovary glabrous*, linear, several-ovuled. Fruit unknown.

86. DERRIS, *Lour.*

1. Derris uliginosa, *Benth.*

Derris uliginosa, Benth. in Pl. Jungh. fasc. 2, p. 252.
Pongamia uliginosa, DC. Prodr. 2, p. 416; Wight & Arn. Prodr. Ind. Or. 1, p. 262.
P. religiosa (sphalm.), Wight, in Hook. Bot. Misc. 3, p. 301, & in Suppl. t. 41, sub nom. *P. triphylla.*

Hab. Philippine Islands, near Caldera, Mindanao. Feejee Islands, at Rewa, &c. (In fruit.) Tongatabu. (In fruit.)

The specimens from Tongatabu frequently have seven leaflets, instead of five, or even three, but apparently do not otherwise differ from the Indian *D. uliginosa*. In the figure cited above, the tenth stamen is represented as distinct; but in the description it is properly said to be united with the sheath of filaments except at the base and summit.

87. DALBERGIA, *Linn. f.*

Dalbergia, Linn. f. Suppl. p. 52; Benth. Pl. Jungh. fasc. 2, p. 254.

1. Dalbergia multijuga, *Graham.*

Dalbergia multijuga, Graham, in Wall. Cat. no. 5865, non E. Meyer.

Hab. Singapore.—A specimen without flowers or fruit, probably belonging to this species, but glabrous or nearly so.

2. Dalbergia cassioides, *Wall.*

Dalbergia cassioides, Wall. Cat. no. 5861; Benth. Pl. Jungh. fasc. 2, p. 254, in adnot.

Hab. Philippine Islands, at Caldera, Mindanao. (Without flowers or fruit.)

3. DALBERGIA TORTA, *Graham*.

Dalbergia (*Selenolobium*) *torta*, Graham, in Wall. Cat. no. 5789; Benth. l. c.

HAB. Feejee Islands: the particular habitat not recorded.

The specimens, in flower only, accord with one in Griffith's collection from Malacca, so named by Mr. Bentham.

4. DALBERGIA (TRIPTOLEMEA) VARIABILIS, *Vogel*.

Dalbergia variabilis, Vogel, in Linnæa, 11, p. 196.
Triptolemea latifolia, *ovata*, *montana*, &c., Mart. in Benth. Comm. Legum. p. 38.
Pterocarpus frutescens, Velloz. Fl. Flum. 7, t. 96.

HAB. Brazil, at Rio Janeiro (the *Triptolemea montana*, Mart.), and Organ Mountains (the *T. ovata*, Mart.).

5. DALBERGIA (TRIPTOLEMEA) MYRIANTHA, *Benth*.

Triptolemea myriantha, Mart. in Benth. Comm. Legum. l. c. p. 38.

HAB. Organ Mountains, Brazil. (In flower only.)

88. EDWARDSIA, *Salisb*.

1. EDWARDSIA GRANDIFLORA, *Salisb*.

Edwardsia grandiflora, Salisb. in Linn. Trans. 9, p. 209; DC. Prodr. 2, p. 97; A. Rich. Bot. Voy. Astrolab. 1, p. 244; Hook. f. Fl. N. Zeal. p. 52.
Sophora tetraptera, Linn. f.; Forst. Prodr. p. 32; Curt. Bot. Mag. t. 167.

Var. β. MICROPHYLLA (Hook. f. l. c.): *foliolis parvis*.

Edwardsia microphylla, Salisb. l. c.; DC. l. c.; Bot. Mag. t. 1442; A. Rich. l. c.
Sophora microphylla, Ait.; Jacq. Hort. Schœnb. t. 269.

Hab. Bay of Islands, New Zealand: in fruit; with foliage of the smaller-leaved state, which, as Mr. Bentham remarks (in Hook. f. Fl. N. Zeal.) is not to be definitely distinguished, even as a variety, from the larger-leaved form of the species.

2. Edwardsia chrysophylla, *Salisb.*

Edwardsia chrysophylla, Salisb. in Linn. Trans. 9, p. 302, t. 26, f. 1; Ker. Bot. Reg. t. 738; DC. l. c.

Var. *β.* glabrata: *foliis calycibusque glabratis; floribus minoribus.*

Hab. Sandwich Islands (where it was first collected by Menzies); on the mountains above the forest zone. Mouna Kea, Hawaii, occupying a zone reaching to an elevation of 11,000 feet; and Mouna Loa, above the crater Lua Pele. Also on the mountains of Kauai; and of the eastern part of Maui, on the banks of the crater Haleakala. Var. *β.* Hawaii, 1,000 feet above Puna.

The *Mamani* of the natives is a small tree, 20 or 30 feet high, somewhat variable in its foliage, pubescence, &c.; the silkiness of the lower face of the leaflets being sometimes of a golden or tawny hue, and sometimes almost silvery. In the variety *β.* this pubescence is shorter as well as more scanty, and the calyx is still more *glabrate;* but I perceive no farther difference, except that the *flowers* are rather *smaller.* In all, the upper surface of the leaflets becomes glabrous and more or less shining. The yellow flowers are not quite an inch in length. The broad vexillum is recurved, as noted by Mr. Bentham in this and in two East Indian species. The stamens are as long as the keel, but not exserted. Ovary tomentose. Legume about 4 inches long, 6–9-seeded, more or less constricted between the seeds, quadrate by the 4 narrow wings, which, with the whole corky epicarp, separate in a somewhat bivalvular manner at full maturity, when the chartaceous and moniliform endocarp becomes more or less two-valved. Seeds oval, somewhat compressed, chestnut-colour.

The unpublished species of *Edwardsia*, from the Sandwich Islands, mentioned by Mr. Bentham, in Dr. Hooker's New Zealand Flora, cited above, is our var. β. I believe it is only a state of *E. chrysophylla*, occurring at a lower elevation than the ordinary form of the species.

89. SOPHORA, *Linn., R. Br.*

1. Sophora macrocarpa, *Smith.*

Sophora macrocarpa, Smith, in Rees, Cycl. no. 6; DC. Prodr. 2, p. 96; Benth. l. c.
Edwardsia Chilensis, Miers, Trav. Chil.; Hook. in Bot. Reg. t. 1798, & Bot. Misc. 3, p. 177; Gay, Fl. Chil. 2, p. 215.

Hab. Chili; common in the neighbourhood of Valparaiso.

2. Sophora tomentosa, *Linn.*

Hab. On the coast, at Rio Janeiro, Brazil: also at the Society, Friendly, Feejee, and Mangsi Islands.

90. VIRGILIA, *Lam.*

1. Virgilia Capensis, *Lam.*

Hab. Cape of Good Hope, in the vicinity of Cape Town.

91. GOURLIEA, *Gillies.*

1. Gourliea decorticans, *Gillies.*

Gourliea decorticans, Gillies, in Hook. Bot. Misc. 3, p. 208, t. 106.

Hab. Rio Negro, North Patagonia. (Without flowers or fruit: the inflorescence in a diseased state.)

SUBORD. II. CÆSALPINIEÆ.

92. GUILANDINA, *Juss.*

1. GUILANDINA BONDUC, *Ait.*

HAB. On the coast at Rio Janeiro, and of the Friendly, Navigators', Feejee, and Sandwich Islands.

Two forms, noted by Dr. Pickering as species, were observed in the South Sea Islands, one of them with tall and climbing stems.

93. CÆSALPINIA, *Linn.*

1. CÆSALPINIA SAPPAN, *Linn.*

HAB. Small island in the Sooloo Sea. (In fruit.)

2. CÆSALPINIA GLABRATA, *H. B. K.*

Cæsalpinia glabrata, H. B. K. Nov. Gen. & Spec. 6, p. 326; DC. Prodr. 2, p. 482.
C. corymbosa, Benth. Pl. Hartw. p. 117.

HAB. Peru; between Lima and Obrajillo.

Apparently intermediate between the *C. glabrata* and *C. corymbosa*, which may with probable reason be united.

3. CÆSALPINIA (POINCIANA) PULCHERRIMA, *Swartz.*

HAB. Rio Janeiro, Brazil. Tahiti, Society Islands. "Cultivated." Also cultivated at the Friendly and Navigators' Islands.

Another species was noticed in the Organ Mountains, Brazil; but there are no specimens in the collection.

94. COULTERIA, *H. B. K.*

1. Coulteria tinctoria, *H. B. K.*

Hab. The specimen is ticketed "Tahiti?" But it was probably gathered in Peru. There is, moreover, a sterile branch in the collection from near Lima, either of this species or of *C. horrida.*

95. HOFFMANSEGGIA, *Cav.*

1. Hoffmanseggia viscosa, *Hook. & Arn.*

Hoffmanseggia viscosa, Hook. & Arn. Bot. Misc. 3, p. 209; Benth. in Gray, Pl. Wright. 1, p. 57.
Larrea viscosa, Ruiz & Pav. Fl. Peruv. t. 377 (ined.).

Hab. Peru; on a mountain ridge near Yanga.

96. CASSIA, *Linn.*

1. Cassia alata, *Linn.*

Hab. Shores of Laguna, Baños, Luzon, Philippine Islands.

2. Cassia occidentalis, *Linn.* &

Var. β. Sophera: *foliolis numerosioribus (legumine turgido breviore.)*

Cassia Sophera, Linn, Wight & Arn., etc.

Hab. St. Jago, Cape de Verde Islands. Upolu, Samoan Islands:

"introduced, and as yet rare." Var. β. Feejee Islands. (A form with more numerous leaflets, in which respect *C. Sophera* alone differs from *C. occidentalis*, and with shorter and rather turgid pods, only two inches long.)

3. Cassia tomentosa, *Linn. f.*

Hab. Hunter's River, New South Wales. Probably introduced?

4. Cassia oblongifolia, *Vogel.*

Cassia oblongifolia, Vogel, Syn. Cass. p. 23, & in Linnæa, 11, p. 666.

Hab. Brazil, near Rio Janeiro: in sand, near the coast.

5. Cassia obtusifolia, *Linn.*

Hab. St. Jago, Cape de Verde Islands. Probably introduced.

6. Cassia Gaudichaudii, *Hook. & Arn.*

Cassia Gaudichaudii, Hook. & Arn. Bot. Beech. Voy. p. 81; Vogel, Syn. Cass. p. 26.
C. montana, Nutt. ined. in Herb. Hook.

Hab. Mountains behind Honolulu, Oahu, Sandwich Islands. (Also gathered by Gaudichaud, Lay & Collie, Nuttall, &c.)

This shrubby species is pretty well characterized in both the works above cited. When the leaflets are reduced to three pairs, the gland is not between the lowest, but on the petiole at some distance below: this gland, at first clavate, as described by Vogel, at length becomes filiform and nearly 2 lines long. The leaflets vary from two-thirds of an inch to 2½ inches in length, and are soon glabrate: so are the pods in most cases, although sometimes finely pubescent, even at maturity. They are broadly linear and very flat, like those of *C. glauca*, membranaceous, acuminate or abruptly pointed at both ends, somewhat stipitate, varying from 1½ to 4½ inches long, from 4 to 6 lines in width. Seeds from 3 to 10, flat (parallel with the valves), nearly orbicular, blackish.

7. Cassia glauca, *Lam.*

Hab. Feejee Islands; on Ovolau and Oneata.

8. Cassia multijuga, *Rich.*

Cassia multijuga, Rich. in Act. Soc. Par. p. 188; Vogel, in Linnæa, 15, p. 69.
C. calliantha, Meyer, Prim. Esseq. p. 169; Vogel, Syn. Cass. p. 31.

Hab. Brazil, near Rio Janeiro, and in the Organ Mountains.

9. Cassia latopetiolata, *Dombey?*

Cassia latopetiolata, Dombey, ex Vogel, Syn. Cass. p. 29?

Hab. Andes of Peru, near Obrajillo. (The specimen too imperfect for proper determination.)

10. Cassia coluteoides, *Colladon.*

Cassia coluteoides, Colladon, Mon. Cass. p. 102, t. 12; Vogel, Syn. Cass. p. 42, & in Linnæa, 15, p. 72.
C. flexuosa, Bertero, in Not. Pl. Rar. Genev. 7, p. 34, t. 6, non Burm.
C. Candolleana, Vogel, Syn. Cass. p. 42.
C. frondosa, Hook. & Arn. Bot. Beech. Voy. p. 22, 75, & Bot. Misc. 3, p. 210.

Hab. Chili, near Valparaiso.

11. Cassia hirsuta, *Linn. f.*

Hab. Peru, between Lima and Obrajillo. (In fruit.)

12. CASSIA ZYGOPHYLLA, *Benth.*

Cassia zygophylla, Benth. in Mitch. Jour. Trop. Austral. p. 258.

HAB. New South Wales: in the interior. (A nearly glabrous variety: probably not distinct from *C. eremophila*, Cunningham, and of Brown in Sturt. Exped. Centr. Austral.)

13. CASSIA ACIPHYLLA, *Benth. ined.*

HAB. Hunter's River, New South Wales; in fruit: accompanied by a flowering specimen, which is noted as having been presented by Mr. Cunningham.

A species allied to *C. artemisioides*, Gaud., *C. Sturtii*, R. Br., &c. The flowering specimen is canescently villous, with the leaves soon glabrate. Leaflets 4 to 8 pairs, linear, about an inch long and a line or two in width, coriaceous, with revolute margins, and a sharp cuspidate point: a subulate gland interposed between most of the pairs: the rhachis terminated by a subulate process. Peduncle two-flowered, about the length of the leaves. Corolla yellow. Legume linear, flat, scarcely stipitate, from 3 to 5 inches long, falcate, obtuse, glabrous.

14. CASSIA AUSTRALIS, *Sims.*

Cassia australis, Sims, Bot. Mag. t. 2676; Bot. Reg. t. 1322; Vogel. Syn. Cass. l. c.
C. umbellata, Reichenb. Ic. Exot. t. 206.

HAB. Newington, New South Wales.

15. CASSIA APOUCOUITA, *Aubl.*

Cassia Apoucouita, Aubl. Pl. Guian. 1, p. 379, t. 116; Vogel, in Linnæa, 15, p. 72.
C. ramiflora, Vogel, Syn. Cass. p. 48.
C. ensiformis, Velloz. Fl. Flum. 4, p. 79.

HAB. On the Corcovado, near Rio Janeiro, Brazil.

16. Cassia ramosa, *Vogel.*

Cassia ramosa, Vogel, Syn. Cass. p. 55, & in Linnæa, 15, p. 72.

Hab. Brazil, in the immediate neighbourhood of Rio Janeiro.

17. Cassia rotundifolia, *Pers.*

Cassia rotundifolia, Pers. Ench. 1, p. 456; Vogel, Syn. Cass. p. 57.
C. bifoliolata, DC.; Colladon, Mon. Cass. p. 120, t. 9.

Hab. Brazil; with the preceding.

18. Cassia Chamæcrista, *Linn.* γ. Brasiliensis, *Vogel.*

Cassia Chamæcrista, Linn., var. γ. *Brasiliensis*, Vogel, Syn. Cass. p. 63. An spec.?

Hab. Brazil, in the vicinity of Rio Janeiro.

19. Cassia Pavoniana, *Don.*

Cassia Pavoniana, Don, Syst. Gard. & Bot. 2, p. 447.
C. calycioides? Hook. Bot. Misc. 2, p. 217.

Hab. Peru, near Callao and Lima.

Probably, as Vogel suggests, a mere variety of *C. Chamæcrista.*

20. Cassia Leschenaultiana, *DC.*

Hab. Singapore.

From Manilla there is also the foliage of an undetermined species, apparently the same as No. 968 of Cuming's Philippine Islands' collection.

97. SWARTZIA, *Willd.*

1. Swartzia grandiflora, *Willd.*

Swartzia grandiflora, Willd. Spec. Pl. 2, p. 1219; DC. Prodr. 2, p. 422.

Hab. Rio Janeiro, Brazil. Indigenous?

2. Swartzia elegans, *Schott.*

Swartzia elegans, Schott. in Spreng. Syst. Veg. Cur. Post. p. 407.

Hab. Organ Mountains, Brazil.

98. AFZELIA, *Smith.*

1. Afzelia bijuga. (Tab. 51.)

A. glabra; foliolis bijugis (summisve raro unijugis) ovatis nitidis; paniculis corymbosis; bracteis bracteolisque parvis caducis; vexillo brevissime unguiculato, alis aut parvulis aut nullis; staminibus fertilibus 3, sterilibus 7 anantheris minimis; ovario sessili; leguminibus oblongis planis mono–pentaspermis demum bivalvibus; seminibus compressis hilo nudis.

Macrolobium bijugum, Colebr. in Trans. Linn. Soc. 5, p. 12.
Outea bijuga, DC. Prodr. 2, p. 511.
Intsia? Amboinensis, DC. Prodr. 2, p. 509? (*Metrosideros Amboinensis*, Rumph. Amboin. 3, p. 21, t. 10), ex Benth.

Hab. Feejee Islands: Ovolau and Somu-somu, near the coast.

"A spreading tree, 50 feet high," *glabrous* throughout, except a minute and cinereous pubescence on the inflorescence and flower-buds.

Leaves abruptly pinnate. Petioles with the rhachis an inch to 2 inches in length. Stipules not seen. *Leaflets* 2 *pairs, or the uppermost reduced to a single pair* (or rarely 3 pairs, according to Dr. Pickering's memoranda), *ovate*, either obtuse, acutish, or somewhat acuminate, coriaceous, somewhat *lucid*, and of nearly the same hue both sides, 3 or 4 inches long, veiny, on partial petioles of 2 or 3 lines in length. *Panicle* terminal, small, consisting of short and *corymbose* racemes. Only flower-buds occur on the specimens: the largest of these are but 2 or 3 lines long, obovoid, on pedicels of about the same length: these are articulated with the rhachis, subtended by a small ovate bract, and furnished about the middle with a pair of similar bractlets, that do not enclose even the half-grown bud: the *bracts and bractlets both caducous*. Calyx four-parted; the segments ovate, obtuse, nearly equal. *Vexillum* in the bud roundish, plicate, auriculate at the base, and *with a short claw*, at this period not longer than the auricles, the margins undulate: its position is opposite the posterior sepal, and its size in the bud is about the same. Lateral petals, or *alæ much smaller*, about half the length of the vexillum, semi-ovate with the upper edge straight, raised on a short and slightly pubescent claw: but in the greater number of flower-buds examined the alæ are *altogether wanting*, as are the anterior petals in all of them. *Fertile stamens* 3, being the anterior and two lateral of the outer series, on filiform and at length elongated slightly hairy filaments: anthers oblong, fixed by the middle, two-celled; the cells opening longitudinally. *Sterile stamens* 7 (or sometimes fewer), *reduced to very small and naked filaments*, one of them interposed between each fertile stamen, the others belonging to the posterior side of the flower. *Ovary sessile* or nearly so, compressed, semi-ovate, silky-pubescent, containing from 5 to 7 roundish ovules in a single series. Style filiform, spirally involute in the bud: stigma terminal, subcapitate. *Legume oblong, flat*, coriaceous, glabrous, from 5 to 8 inches long, about 2 inches wide, *at length two-valved;* the valves externally reticulated, within furnished with narrow transverse projections, which intercept the cavity between the seeds. *Seeds* from 2 to 5, or *sometimes solitary, compressed*, orbicular, an inch or more in diameter, *not arillate* nor appendaged at the small hilum; the bony but thin testa smooth, involved in a covering of furfuraceous matter; which when fresh is probably juicy. Cotyledons flat and thin, orbicular, enclosing the short and straight retracted radicle.

"The *Outea bijuga*, DC. is certainly closely allied to the African *Afzelia*, *Anthonota*, *Intsia*, and *Berlinia*, and also to the American *Eperua*, *Parivoa*, *Outea*, and *Vouapa:* but if these are kept distinct, *Outea* is certainly the one of them all it is farthest from in habit and in the pod. I am not acquainted with the *Intsia Madagascariensis;* but the *I. Amboinensis* is probably a congener of, if not the same species as *Outea bijuga*, and I think, as far as we know both *Intsia* and *Outea bijuga*, cannot well be generically separated from *Afzelia*. *Intsia Madagascariensis* is said to have unequally pinnate leaves; but the allied genera *Eperua* and *Parivoa* appear to have them both abruptly and unequally pinnate on the same plant." Bentham, in litt.

PLATE 51.—AFZELIA BIJUGA: a branch, with fruit and flower-buds, of the natural size. Fig. 1. A flower-bud, with its pedicel and bractlets. 2. Diagram of the flower. 3. An opened flower-bud. 4. Petals, from the same. 5, 6. Fertile stamens. 7. Pistil. 8. Same, with the ovary divided longitudinally.—All these details magnified. 9. A legume, of the natural size, with one valve removed. 10. A seed divided.

99. BAUHINIA, *Linn.*, *Benth.*

1. BAUHINIA BRASILIENSIS, *Vogel.*

Bauhinia Brasiliensis, Vogel, in Linnæa, 13, p. 302.

HAB. Brazil; common in the Organ Mountains, and near Rio Janeiro.

2. BAUHINIA GRANDIFLORA, *Juss.*

Bauhinia grandiflora, Juss. in Poir. Dict. Suppl. 1, p. 600; DC. Prodr. 2, p. 513.

HAB. Peru, in the vicinity of Lima. "The tree perhaps not there indigenous."

100. PILIOSTIGMA, *Hochst.*

Piliostigma, Hochst. in Flora, 1846, p. 598; Benth. in Pl. Jungh. fasc. 2, p. 261.

1. Piliostigma acidum, *Benth. l. c.*

Bauhinia acida, Reinw. in Korth. Verhand. Nat. Gesch. Kruidk. p. 86.
B. purpurea, DC. Prodr. 2, p. 515, non Linn.
Casparea castrata, Hassk. Pl. Jav. Rar. 1, p. 412.

Hab. Philippine Islands: in mountains, near Baños, Luzon.

101. SCHNELLA, *Raddi.*

1. Schnella macrostachya, *Raddi.*

Schnella macrostachya, Raddi, Pl. Bras. Addend. in Mem. Moden. 18, p. 411
Bauhinia ungulata, Linn. Spec. Pl. p. 535, ex Spreng.
B. Raddiana, Bongard, in Mem. Acad. Petrop. (1836), t. 3?

Hab. Near Rio Janeiro, Brazil. (Foliage only.)

There is also foliage of what is probably another species resembling *S. splendens*, but with almost lanceolate and acuminate leaflets.

102. CYNOMETRA, *Linn.*

1. Cynometra grandiflora, Sp. Nov. (Tab. 52.)

C. glaberrima; foliolis bijugis ovalibus oblongisve inæquilateris sæpissime emarginatis coriaceis; racemis corymbosis confertifloris; staminibus 21–32; *ovario lævi stylo breviore.*

HAB. Ovolau and Vanua-levu, Feejee Islands.

"A spreading tree, about 40 feet high; the branchlets verrucose, and, with the leaves, flowers, &c., *entirely glabrous*. Stipules linear, very caducous. *Leaflets* two *pairs*, of equal size and shape, *oval or oblong*, 2 or 3 inches in length, more or less *unequal-sided*, either obtuse or more or less acuminate, but the apex almost always narrowly *emarginate*, *coriaceous* in texture, dull or pale, sometimes a little shining above, inconspicuously feather-veined and reticulated. Petiole somewhat woody. Buds of the inflorescence (sessile in the axils and terminal) and also the leaf-buds, large and scaly, two-thirds of an inch long, ovoid-fusiform; the scales coriaceous, orbicular or ovate, finely striate, minutely rusty-pubescent externally, regularly imbricated, deciduous before the flowers expand; the uppermost passing into spatulate and linear and chartaceous deciduous bracts, which are as long as the pedicels. *Racemes* short and *corymb-like*, nearly sessile, often as long as the leaves; the *flowers* (apparently flesh-colour) *crowded*, on pedicels of about an inch in length. At the base of each is a pair of subulate, stipule-like bractlets, which are sparsely hispid on the midrib. Tube of the calyx turbinate, fleshy, free from the substipitate base of the ovary, which it closely encloses; the lobes 4, petaloid, oblong, naked and glabrous, half an inch long. Petals 4, spatulate-lanceolate, as long as the lobes of the calyx, inserted on its throat. *Stamens* 21 *to* 32, inserted with the petals: filaments filiform, an inch in length: anthers oval-oblong, subcordate, with a rather fleshy connective; the two cells longitudinally dehiscent for their whole length. *Ovary* flat, oblong, somewhat falcate, *smooth* and glabrous, or slightly pubescent towards the apex, two-ovuled, tapering into a slender, filiform, and straightish style, which is terminated by a depressed discoid stigma. Mature fruit not seen.

There are two or three forms of this species in the collection, varying principally in the breadth of the leaflets. One, from Ovolau (Plate 52, *C*), has broadly oval and rather thinner leaflets, somewhat shining above, and may possibly belong to a different species; but it is not in flower, and its large scaly buds are leaf-buds only.

PLATE 52.—CYNOMETRA GRANDIFLORA: *A*, *B*. Flowering specimens, two forms, of the natural size. *C*. Branchlet of a variety with

broader and thinner leaflets, and large scaly leaf-buds. Fig. 1. A detached flower from *B*, with its pedicel, bract, and bractlets. 2. A bractlet, magnified. 3. Calyx and pistil. 4. Vertical section of a flower, enlarged. 5, 6. Stamens, enlarged; the former seen posteriorly, the latter anteriorly.

2. CYNOMETRA FALCATA, Sp. Nov.

C. foliolis unijugis glaberrimis ovato-lanceolatis obliquis falcatis coriaceis; floribus sine pedunculo; fasciculatis decandris ovario lunato pubescente stylo recurvo longiore.

HAB. Feejee Islands, at Ba, on the western coast of Viti-levu.

Branches slender, minutely verrucose. Petioles at most 2 lines in length, bearing a *single pair of leaflets.* These are *ovate-lanceolate, oblique, and falcate,* gradually acuminate, with the apex rather blunt, 2 or 3 inches long, *coriaceous, very glabrous,* and somewhat shining both sides, minutely feather-veined. The scaly flower-buds are ovoid, *axillary,* only 2 or 3 lines long; the scales orbicular and striate. In the solitary specimen most of these are undeveloped: but the single undeveloped flower in the axil of the scales is seen to be laterally enveloped by a pair of diaphanous and ciliate-fringed bractlets; and the sepals appear to be obscurely puberulent, but not tipped with a tuft of hairs. They enclose *only* 10 *stamens,* or sometimes perhaps fewer. The scaly buds that have expanded display a *sessile fascicle,* or rather a small corymb (the axis 2 or 3 lines long), bearing a number of pubescent pedicels (2 or 3 lines long), from which all but the ovary has fallen. The *ovary* is *lunate, tomentulose-pubescent,* a line and a half long, and rather *longer than the recurved style* by which it is pointed. Fruit unknown.

This species belongs to Wight & Arnott's first subgenus, or *Cynometra* proper, although the sepals are not "tipped with a tuft of hairs." I have not the means of comparing it with the *C. ramiflora,* of Linnæus. The flowers are very small, as compared with the preceding species, and apparently much smaller than those of *C. polyandra.*

3. Cynometra inæquifolia, Sp. Nov.

C. foliolis bijugis coriaceis glabris reticulatis valde inæquilateris inæqualibus, duobus inferioribus ovalibus quam superioribus oblongis multo minoribus.

Hab. Philippine Islands, near Baños, Luzon. (Also collected by Mr. Cuming: no. 1297.)

The specimen exhibits the foliage only, with a young scaly bud. *Leaflets* 2 *pairs*, *coriaceous*, *glabrous*, pale beneath, lucid above, loosely *reticulate-veined*, obtuse or emarginate, *very unequal-sided*, especially the *terminal pair*, which also is *very much larger* than the lower pair: the two upper are *oblong*, 6 or 7 inches long, and almost dimidiate; the lower are *oval*, 2 to 2½ inches long, about the length of the rhachis with the petiole. Fruit and flowers unknown.

Subord. III. MIMOSEÆ.

103. ENTADA, *Adans.*

1. Entada scandens, *Benth.*

Mimosa scandens, Linn. Spec. Pl. ed. 2, p. 1501; Swartz, Obs. p. 389.
Entada scandens, Benth. in Hook. Jour. Bot. 4, p. 332.
E. Gigalobium, *Pursætha*, *monostachya*, & *Adenanthera*, DC. Mem. Legum. & Prodr. 2, p. 425.

Hab. Samoan and Feejee Islands; climbing over tall trees: apparently indigenous. (Remarkable for the extraordinary size of its pods.)

104. PIPTADENIA, *Benth.*

1. Piptadenia communis, *Benth.*

Piptadenia communis, Benth. in Hook. Jour. Bot. 4, p. 337.

HAB. Brazil, near Rio Janeiro. (The leaves of one specimen are in a monstrous state, probably from the sting of insects.)

2. PIPTADENIA MACROCARPA, *Benth. l. c.*

HAB. Brazil; with the preceding species.

105. ALGAROBIA, *Benth.*

ALGAROBIA, Benth. Pl. Hartw. p. 13; Torr. & Gray, Fl. N. Amer. 1, p. 399; Gray, Pl. Lindh. 1, p. 35, & Pl. Wright. 1, p. 60.
PROSOPIS, § ALGAROBIA, Benth. Mimos. in Hook. Jour. Bot. 4, p. 348.

1. ALGAROBIA JULIFLORA.

Mimosa juliflora, Swartz, Prodr. Fl. Ind. Occ. p. 85.
Prosopis juliflora, DC. Prodr. 2, p. 447; Benth. in Hook. Jour. Bot. l. c.
P. affinis, Spreng. Syst. Veg. 2, p. 326.

HAB. Rio Negro, North Patagonia; common on the plains. In fruit: with foliage also of a small-leaved form, the *Prosopis dulcis, γ. australis*, Benth. l. c.

The pods as well as the foliage so closely resemble those of our Texan and Mexican *Mezquite* (*A. glandulosa*, Torr. & Gray) as to render it most probable that we have one polymorphous species, extending from Arkansas to Patagonia, as Mr. Bentham suggests. In either case, the plant before us must bear the name of *juliflora*. The fruit shows well the character of the genus, namely, the separation of the endocarp into a series of detached and closed joints, or pips, each containing a seed.

106. STROMBOCARPA (*Benth.* sub Prosop.).

PROSOPIS, § STROMBOCARPA, Benth. Mimos. in Hook. Jour. Bot. 4, p. 351, excl. sp.
STROMBOCARPA, Gray, Pl. Wright. 1, p. 60.

1. STROMBOCARPA STROMBULIFERA.

Mimosa strombulifera, Lam. Dict. 1, p. 15.
Acacia strombulifera, Willd. Spec. 4, p. 1055; DC. Prodr. 2, p. 455.
Prosopis strombulifera, Benth. Mimos. l. c.

HAB. Rio Negro, North Patagonia. (In flower only.)

This and *S. reptans*, take the place in the pampas of the southern temperate zone on this continent that *S. pubescens*, *S. cinerascens*, and *S. odorata* do in the arid plains of Texas, New Mexico, and the interior of California.

107. NEPTUNIA, *Lour.*, *Benth.*

1. NEPTUNIA PUBESCENS, *Benth.*

Neptunia pubescens, Benth. Mimos. in Hook. Jour. Bot. 4, p. 354.

HAB. Peru; in the vicinity of Callao.

2. NEPTUNIA GRACILIS, *Benth. l. c.*

HAB. New South Wales; in the district of Hunter's River.

108. DESMANTHUS, *Willd.*, *Benth.*

1. DESMANTHUS DEPRESSUS, *Kunth.*

Desmanthus depressus, Kunth, in Willd. Spec. Pl. 4, p. 1546, & Pl. Legum. p. 115, t. 35.

HAB. Peru; in the vicinity of Callao and Lima. (In fruit.)

109. MIMOSA, *Linn.*, *Willd.*

1. Mimosa albida, *Kunth.*

Mimosa albida, Kunth, Mimos. t. 1; DC. Prodr. 2, p. 426; Benth. Mimos. in Hook. Jour. Bot. 4, p. 360.

Hab. Peru; in the vicinity of Callao and Lima.

2. Mimosa Velloziana, *Mart.*

Mimosa Velloziana, Mart. Herb. Fl. Bras. p. 185; Benth. Mimos. l. c. p. 361. *M. viva*, Velloz. Fl. Flum. 11, t. 33, non Linn.

Hab. Organ Mountains, Brazil, in the neighbourhood of Rio Janeiro; very common.

3. Mimosa pudica, *Linn.*

Hab. Tahiti and Tongatabu: where the *Sensitive Plant* occurs only as "an introduced weed, around dwellings."

4. Mimosa sepiaria, *Benth.*

Mimosa sepiaria, Benth. Mimos. in Hook. Jour. Bot. 4, p. 395.

Hab. Brazil, in the vicinity of Rio Janeiro; very abundant.

5. Mimosa elliptica, *Benth. l. c.*

Hab. Brazil; with the preceding species.

6. MIMOSA GILLIESII, *Benth.*

Mimosa Gilliesii, Benth. Mimos. in Hook. Jour. Bot. 4, p. 413.
Prosopis globosa, Gillies, in Hook. Bot. Misc. 3, p. 205.

HAB. Rio Negro, North Patagonia: on the sandy plains.

This and *M. ephedroides*, the other species of the section, appear to be very closely allied. The pods, as well as the spinescent Broom-like branchlets, of our plant are quite glabrous; but the capitula are peduncled, and there are a few leaflets. Flowers not seen. The ripe pods, with the replum, break up into indehiscent articles.

110. LEUCÆNA, *Benth.*

1. LEUCÆNA FORSTERI, *Benth.*

Leucæna Forsteri, Benth. Mimos. in Hook. Lond. Jour. Bot. 5, p. 94.
Mimosa glandulosa, Soland. in Forst. Prodr. Fl. Ins. Austr. p. 92.
Acacia insularum, Guillem. Zeph. Tait. p. 66.

HAB. Point Venus, Tahiti. Vanua-levu, Feejee Islands. Tongatabu.

There is nothing to add to Guillemin's detailed description of this plant (which is rightly referred to *Leucæna* by Bentham), except that the mature pods in our specimens are plane.

111. ACACIA, *Linn., Benth.*

* PHYLLODINEÆ *Australasicæ.*

1. ACACIA BROWNII, *Steud.*

Acacia Brownii, Steud. Nomencl. Bot. ed. 1, p. 2; DC. Prodr. 2, p. 449; Benth. Mimos. in Hook. Lond. Jour. Bot. 1, p. 338.

HAB. New South Wales, in the neighbourhood of Sydney.

2. ACACIA JUNIPERINA, *Willd.*

Acacia juniperina, Willd. Spec. Pl. 4, p. 1049; Vent. Hort. Malm. t. 46; Benth. l. c.
A. echinula, DC. Prodr. 2, p. 449.

HAB. New South Wales, near Sydney.

3. ACACIA BAUERI, *Benth.*

Acacia Baueri, Benth. Mimos. in Hook. Lond. Jour. Bot. 1, p. 344.

HAB. New South Wales, near Woolongong, &c.

4. ACACIA HISPIDULA, *Willd.*

Acacia hispidula, Willd. Spec. Pl. 4, p. 1054; Lodd. Bot. Cab. t. 823; Hook. Ic. Pl. t. 161.

HAB. New South Wales; abundant in the neighbourhood of Sydney.

5. ACACIA VESTITA, *Ker.*

Acacia vestita, Ker, Bot. Reg. t. 698; Benth. Mimos. l. c. p. 348.

HAB. New South Wales.

6. ACACIA CULTRIFORMIS, *A. Cunn.*

Acacia cultriformis, A. Cunn. in Don, Gard. Dict. 2, p. 406; Hook. Ic. Pl. t. 170.

HAB. Hunter's River, New South Wales.

7. Acacia myrtifolia, *Willd.*

Acacia myrtifolia, Willd. Spec. Pl. 4, p. 1054; Lodd. Bot. Cab. t. 772; Benth, l. c.

Hab. New South Wales, near Sydney.

8. Acacia suaveolens, *Willd.*

Hab. New South Wales, near Sydney and Hunter's River: with a narrower-leaved form, perhaps *A. angustifolia*, Wendl.

9. Acacia linifolia, *Willd.*

Hab. New South Wales, in the vicinity of Sydney, &c.

10. Acacia prominens, *A. Cunn.* var. latifolia, *Benth. ined.*

Hab. New South Wales. (A. Cunningham.)

11. Acacia elongata, *Sieber, in DC.*.

Hab. New South Wales. (A. Cunningham.)

12. Acacia melanoxylon, *R. Br.*

Hab. New South Wales, near Sydney, Newington, &c.: very common.

13. Acacia linearis, *Sims.*

Hab. Sydney, New South Wales; where it appears to be common.

14. Acacia floribunda, *Willd.*

Hab. New South Wales (the particular station not recorded).

15. Acacia longifolia, *Willd.*

Hab. New South Wales, near Newington, &c. (Also St. Helena: doubtless from a cultivated plant.) Principally a broad-leaved form.

16. Acacia glaucescens, *Willd.*

Hab. New South Wales (A. Cunningham); with a shorter and broader-leaved variety.

* * Phyllodineæ *Oceanicæ.*

17. Acacia Koa.

A. glabra; ramulis vix angulatis; phyllodiis elongatis falcatis lanceolatis basi vel utrinque angustatis coriaceis multinerviis hinc inde folio bipinnato terminatis; foliolis oblongis emarginatis 12–15-*jugis; pedunculis solitariis vel brevissime racemosis; capitulis dense multifloris; calyce breviter dentato, dentibus flavo-tomentosis subglandulosis; legumine lato-lineari plano glabro, suturis angustissime marginatis.*

Acacia heterophylla, Hook. & Arn. Bot. Beech. Voy. p. 81; Benth. Mimos. l. c. p. 368, excl. syn.

Hab. Sandwich Islands: Oahu; on the mountains behind Honolulu: Hawaii; on the sides of Mouna Loa and Mouna Kea.

A large tree; *glabrous*, or the nascent parts puberulent; the branches terete: *branchlets slightly angled*, not striate. *Phyllodia falcate, lanceolate, coriaceous*, rarely oval-oblong, 4 to 6 inches long, varying from 3 or 4 lines to an inch or more in breadth, *narrowed at* *the base*, and often tapering towards the apex, which is either acute or obtuse, often sphacelate and rounded; the smooth surface is striate with many nerves, of which 4 or 5 are stronger and more conspicuous. On younger plants especially, some of the phyllodia bear a *bipinnate leaf*, of few pinnæ; the *leaflets* 12 *to* 15 *pairs*, *oblong*, *emarginate*, crowded. *Peduncles solitary* or fascicled in the axils, or often several and *somewhat racemose* on a short rhachis, about half an inch long, bearing a *dense many-flowered head*, of 4 lines in diameter. *Calyx* turbinate, glabrous, except the rounded and very *short teeth*, 5 in number, which are densely bearded or *tomentose* with a *yellow and somewhat glandular* pubescence. Petals 5, oblong-lanceolate, glabrous, more or less united, about one-third longer than the calyx, half the length of the stamens. Ovary pubescent, or when sterile glabrous, subsessile, oblong. *Legume broadly linear*, straight or slightly falcate, 3 to 6 inches long, two-thirds or three-fourths of an inch broad, *glabrous*, *flat*, obtuse at both ends, about twelve-seeded; the thin valves transversely venulose; the sutures not thickened, furnished with an acute but *very narrow margin*.

This, the *Koa* of the natives, is one of the largest and most important timber trees of the Sandwich Islands: from its trunks the canoes of the Hawaiians are made. Mr. Bentham's var.? *latifolia* is only a state of the species. Our specimens are wholly destitute of leaflets.

Gaudichaud, who had the advantage of seeing both growing in their native countries, pronounced the tree of the Sandwich Islands identical with the original *A. heterophylla*, Willd. (*Mimosa heterophylla*, Lam. excl. β.) of Isle Bourbon, which moreover has long been cultivated in botanic gardens. Hooker and Arnott, adopted this view (and even referred to it the *A. laurifolia*, Willd.), in which they were followed by Bentham, who inadvertently overlooked the Bourbon plant, and cited no habitat except the Sandwich Islands. In distinguishing the two trees, peculiar to these most widely separated stations, perhaps I incur the charge of being influenced by geographical considerations rather than botanical characters: for neither the flowers nor the phyllodia of the two differ very much; and, for lack of proper materials, I cannot complete the comparison, possessing no leaflets of the present plant, and no pods of the original *A. heterophylla*. I feel confident, however, that sufficient differences will be found.

18. ACACIA LAURIFOLIA, *Willd.*

Acacia laurifolia, Willd. Spec. Pl. 4, p. 1053; Labill. Sert. Austro-Cal. p. 68, t. 68; Benth. Mimos. l. c. p. 369.
Mimosa Mangium, Forst. Prodr. Fl. Ins. Austr. p. 75, non Linn.
M. simplicifolia, Linn. f. Suppl. p. 436.

HAB. Friendly, Navigators' or Samoan, and Feejee Islands: along the shores.

The phyllodia vary from 2 to 5 inches in length, and from 1½ to 3 inches in width. There is likewise a form from Vanua-levu, Feejee Islands, with narrower and mostly pointed phyllodia. The pods are sharply margined, as described by Mr. Bentham; leaving no doubt that the species is distinct from the foregoing, to which Hooker and Arnott united it.

19. ACACIA RICHII, Sp. Nov. (Tab. 53.)

A. *glaberrima; ramulis angulatis; phyllodiis lanceolatis acuminatis subfalcatis chartaceo-coriaceis multinerviis, apice sæpius hamato; pedunculis fasciculatis capitulo parvo multifloro longioribus; calyce dentato; legumine oblongo plano glabro, marginibus acutis angustissimis.*

HAB. Feejee Islands; common in barrens, at Sandalwood Bay, Vanua-levu, and Naloa.

"Tree 20 or 30 feet high, with the habit of a Willow," *entirely glabrous;* the *branchlets angled*, slender. Leaves (*phyllodia*) *lanceolate*, from 1½ to 3 inches long and 2½ to 6 lines wide, *tapering to an acute apex*, *which is often hooked* or curved, *slightly falcate*, *chartaceo-coriaceous* in texture, sessile, thickened, but not glanduliferous at the base, closely *many-nerved*, and with minute connecting veinlets. *Peduncles fascicled* in the axils, from 3 to 8 together, filiform, 3 or 4 lines in length, bearing single *small and many-*(16–20-)*flowered capitula*, of only 2 lines in diameter (including the stamens). *Calyx* glabrous, obtusely *five-toothed*. Petals oblong, thrice the length of the calyx. Ovary glabrous. *Legume oblong*, perhaps also oblong-linear, *flat*, *glabrous*, 7 or 8 lines wide; the valves thin, reticulated; the *margins acute* but much less salient than in *A. laurifolia*.

PLATE 53, *B.*—ACACIA RICHII: a flowering branch, of the natural size. Fig. 1. A leaf, capitula, &c., enlarged. 2. A flower, magnified. 3. Posterior view of the same. 4. A petal, magnified. 5. A stamen, magnified. 6. Pistil, equally magnified, the ovary divided. 7. Legume. 8. A seed, magnified. 9. Vertical section of the same.

* * * BOTRYCEPHALÆ (*Australasicæ*).

20. ACACIA ELATA, *A. Cunn.*

Acacia elata, A. Cunn.; Benth. Mimos. in Hook. Lond. Jour. Bot. 1, p. 383.

HAB. New South Wales, near Newington.

21. ACACIA SPECTABILIS, *A. Cunn.*, *l. c.*

HAB. New South Wales. (A. Cunningham.)

22. ACACIA DISCOLOR, *Willd.*

HAB. Sydney, New South Wales.

23. ACACIA DECURRENS, *Willd.*

HAB. New South Wales: probably from the vicinity of Sydney.

24. ACACIA MOLLISSIMA, *Willd.*

HAB. New South Wales, near Sydney and Hunter's River:—a variety (*stenoloba*) with narrower pods than ordinary.

* * * * GUMMIFERÆ.

25. ACACIA PELLACANTHA, *Vogel.*

Acacia pellacantha, Vogel, in Rel. Meyen. p. 45; Benth. Mimos. in Hook. Lond. Jour. Bot. 1, p. 390.

HAB. Peru; around Callao and Lima.

26. ACACIA FARNESIANA, *Willd.*

HAB. St. Jago, Cape de Verde Islands. Tahiti, Society Islands. Baños, Luzon.—Doubtless introduced, into all these stations, from America.

27. ACACIA CAVENIA, *Hook. & Arn.*

HAB. Chili; common near Valparaiso.—Probably, as Mr. Bentham intimates, not distinct from the preceding species.

28. ACACIA ALBIDA, *Delile.*

HAB. St. Jago, Cape de Verde Islands.

* * * * * VULGARES (*Americanæ*).

29. ACACIA LACERANS, *Benth.*

Acacia lacerans, Benth. Mimos. in Hook. Lond. Jour. Bot. 1, p. 511.

HAB. Brazil, near Rio Janeiro.

30. ACACIA PTERIDIFOLIA, *Benth. l. c.*

HAB. Brazil, in the vicinity of Rio Janeiro.

112. PITHECOLOBIUM, *Mart.*, *Benth.*

1. Pithecolobium dulce, *Benth.*

Pithecolobium dulce, Benth. Mimos. in Hook. Lond. Jour. Bot. 3, p. 199.

Hab. Luzon, Philippine Islands; introduced from Tropical America.

2. Pithecolobium Clypearia, *Benth. l. c.*

Hab. Singapore.

113. SERIANTHES, *Benth.*

1. Serianthes myriadenia, *Planchon, ined.*

Acacia myriadenia, Bertero, in Guillem. Zeph. Tait. p. 65, excl. syn.

Hab. Eimeo and Tahiti, Society Islands: in forests. Somu-somu, &c., Feejee Islands: on the banks of streams.

The specimens bear only fruit, and a few young flower-buds. The ripe pod accords with the character given by Bentham for *S. grandiflora*, except that it is not bullate, but finely wrinkled transversely, and ferruginous. The flowers are noted by Bentham, in Hook. Lond. Jour. Bot. 5, p. 108. In Dr. Pickering's notes this is said to be a large tree at Eimeo, with the foliage of *Tamarindus:* at the Feejee Islands, a spreading tree, 40 feet high.

2. Serianthes Vitiensis, Sp. Nov.

S. foliolis ellipticis emarginatis utrinque lætevirentibus supra lucidis *penninerviis; glandulis petiolaribus nullis; legumine tenui-lignoso tomentello, valvis laxe venosis.*

HAB. Feejee Islands, at Sandalwood Bay, Vanua-levu, &c.

This is nearly related to *S. grandiflora*, Benth.: but the pod is thinner; the pinnæ and the leaflets are rather fewer; there are *no petiolar glands*, and none between the pinnæ; but they occasionally occur between the uppermost leaflets. The *leaflets* are *bright green both sides, shining above*, glabrous, scarcely oblique, *elliptical, emarginate*, about half an inch long, *pinnately veined*. Flowers not seen. *Legume* oblong, 5 or 6 inches in length and 2 inches wide, thin and plane, twisted, *minutely tomentose* with a rusty down, scarcely thickened at the margins; the *thin* but *woody* valves strongly coherent between the seeds, *loosely veined* with a few salient and narrow veins, which branch into slender reticulated veinlets. Seeds transverse, oblong, about 8 lines in length.

114. INGA, *Plumier, Mart.*

1. INGA SEMIALATA, *Mart.*

Inga semialata, Mart. Herb. Fl. Bras. p. 114; Benth. Mimos. in Hook. Lond. Jour. Bot. 4, p. 588.
Mimosa semialata, Velloz. Fl. Flum. 11, t. 5.

HAB. Brazil; in the Organ Mountains.

2. INGA FEUILLEI, *DC.*

HAB. From a garden at Lima (without flowers or fruit): cultivated under the name of *Pacai*.

The foliage accords with the figure of the *Pacai* in Feuillée, except that the leaflets are rather obtuse at both ends. There are no materials for clearing up this obscure species.

3. Inga Cumingiana, *Benth. l. c.*

Hab. Peru; abundant between Lima and Obrajillo.

The leaflets are either obtuse and pointless, or mucronate, or caudate-acuminate.

4. Inga affinis, *DC.*

Inga affinis, DC. Prodr. 2, p. 433; Benth. Mimos. in Hook. Lond. Jour. Bot. 4, p. 619.
I. dulcis, & *I. Velloziania*, Mart. Herb. Fl. Bras. p. 113.

Hab. Organ Mountains, Brazil.

115. AFFONSEA, *St. Hil.*

1. Affonsea bullata, *Benth.*

Affonsea bullata, Benth. Mimos. in Hook. Lond. Jour. Bot. 5, p. 77.

Hab. Brazil; near Rio Janeiro. (With flower-buds only.)

ORD. CHRYSOBALANACEÆ.

1. PARINARIUM, *Juss.*

PARINARIUM (*Parinari*, Aubl.), Juss. Gen. p. 342; DC. Prodr. 2, p. 526; Benth. in Hook. Jour. Bot. 2, p. 211, & Niger Fl. p. 335.

1. PARINARIUM (PETROCARYA) INSULARUM, Sp. Nov. (Tab. 54.)

P. foliis lanceolato-ovatis seu oblongo-lanceolatis basi subcordatis vel obtusissimis supra nitidis subtus incanis; stipulis lanceolato-subulatis petiolo eglanduloso duplo longioribus; floribus cymoso-paniculatis; staminibus fertilibus 6–8, *sterilibus* 2–4; *drupa biloculari sæpius disperma.*

HAB. Feejee Islands: Sandalwood Bay, Vanua-levu, and Ambau. Samoan or Navigators' Islands: the habitat not recorded.

A "tree 50 feet high, with spreading branches; the trunk 2½ feet in diameter." Branchlets tomentose, at length glabrate; the older ones very warty. *Leaves lanceolate-ovate*, varying to *oblong-lanceolate*, usually acuminate, *subcordate or very obtuse at the base*, 3 to 5, and on sterile shoots 6 to 8 inches long, thickish, copiously feather-veined, and beneath with rather conspicuously reticulated veinlets, the nascent ones clothed on both sides with a rusty or whitish wool, the *upper surface* soon glabrous and *shining*, the *lower canescent* or whitened with a fine and close pubescence. *Stipules lanceolate-subulate* or linear, fuscous, about half an inch long, *twice the length of the petiole*, which, as well as the base of the leaf, is *glandless*. Inflorescence terminal, *cymose-paniculate*, tomentose, only seen with undeveloped flower-buds, when it is shorter than the adjacent leaf. Flowers bibracteolate, small; the buds only 2 lines in length. Tube of the calyx short, gibbous, villous inside; the 5 lobes ovate, acute. Petals 5, not longer than the calyx, ciliolate, 2 or 3 of them (on the side next the ovary) ovate, the others oblong-lanceolate. Stamens apparently varying from 8 to 12, of which from 6 to 8 are fertile, and 2 to 4, on the side remote from the ovary, sterile; the latter being reduced to small and naked tooth-like processes or filaments: anthers didymous, two-celled. Ovary coherent to the gibbous side of the calyx-tube, two-celled, villous, as is the base of the basilar style. Ovule solitary in each cell, anatropous; the rhaphe on the side next the dissepiment. Fruit an ovoid *drupe*, of nearly 2 inches in length, slightly flattened laterally; the epicarp smooth; the putamen very thick and woody, with its surface little roughened, *two-celled, and usually two-seeded:* but no well-formed and mature seeds are found in the fruits preserved in the collection.

In a drawing made by the Botanical Artist of the Expedition, the flower is represented as having fourteen fertile stamens, occupying a complete circle, and no sterile filaments. But all the young flower-buds I could venture to dissect were as represented in the above description and the accompanying analyses.

The species is, without doubt, nearly related to *P. Sumatranum*, Benth. (*Petrocarya Sumatrana*, Jack); which is said to have the elliptical-oblong leaves acute at the base, and seven fertile stamens on one side of the flower, and as many abortive ones on the other.

PLATE 54, *B.*—PARINARIUM INSULARUM: a branch, with flower-buds, and the summit of another, with a fruit, of the natural size. Fig. 1. An opened flower-bud. 2. Vertical section of the same. 3. One of the anterior petals. 4. One of the posterior petals. 5, 6. Stamens, seen anteriorly and posteriorly.—These details variously enlarged. 7. Transverse, and 8, longitudinal section of the drupe, of the natural size.

2. PARINARIUM? MARGARATA, Sp. Nov. (Tab. 54.)

P. glabrum; foliis oblongis basi acutis eglandulosis; drupa septo tenui evanido demum sæpe uniloculari; cotyledonibus conferruminatis.

Hab. Feejee Islands; in the Sandalwood district of Vanua-levu. (In fruit only.)

This is recorded in Dr. Pickering's notes under its native name of "*Margarata.*" He states that the fruit is "indehiscent, two-celled," and that it is "used to blacken the face and hair." The specimens consist of a leafy branch, entirely *glabrous*, with *oblong*, mostly acuminate, ample *leaves* (from 7 to 10 inches long), *acute at the base*, *glandless*, rather thin, dull, sparsely feather-veined, the veins connected by inconspicuous reticulated veinlets; the petiole about half an inch long; with which are two separate, unripe *drupes*. The latter are oval, slightly flattened laterally, an inch and a half or more in length, and an inch and a quarter in width: one of them exhibits a *thin and evanescent partition*: the other has become one-celled by the obliteration of this partition, and contains a single seed, in which the unripe and partly decayed or injured *cotyledons* are seen to be strongly *conferruminate*, thus appearing not unlike the albumen of a Nutmeg.

Plate 54, *A.*—Parinarium? Margarata. Fig. 1. A leaf, with a part of the branch. 2. A drupe. 3. Transverse section of the same and of the contained seed. 4. Vertical section of an empty and infertile drupe, showing the thin partition.—All of the natural size.

3. Parinarium (Sarcostegia) laurinum, Sp. Nov. (Tab. 55.)

P. ramis junioribus subsericeis; foliis oblongis acuminatis basi rotundata biglandulosis glabris lucidis; stipulis linearibus caducis; floribus racemosis; calyce infundibuliformi subobliquo, ore æquali, lobis obovatis obtusis petalis brevioribus; staminibus fertilibus circiter 15, *anticis elongatis, sterilibus* 7–10 *brevissimis dentiformibus.*

Hab. Samoan or Navigators' Islands: the particular habitat not identified.

Apparently a tree, with glabrate branches; the *young branchlets* and inflorescence *silky-pubescent*. *Leaves oblong*, inclining to lanceolate, more or less *acuminate*, *rounded at the base*, where there is a *pair* *of glands* attached to the base of the midrib: they are *glabrous*, 6 to 8 inches long and 2 or 3 inches wide, rather coriaceous and *lucid*, especially the upper surface, copiously feather-veined; the veins 10 to 12 pairs, divergent, and connected by an elaborate network of veinlets. Petiole only 2 or 3 lines in length. *Stipules linear*, 5 or 6 lines long, very *caducous*. *Flowers* crowded in axillary or terminal, short-peduncled, sometimes geminate *racemes*, which are shorter than the leaves, more or less spreading. Bracts oblong-linear, coriaceous, caducous. Pedicels articulated with the axis, 1½ to 2½ lines long, bibracteolate near the summit; the bractlets oblong-linear, longer than the pedicel, shorter than the calyx-tube, deciduous. *Calyx* externally silky-canescent; the *tube funnelform* or club-shaped, *a little oblique*, 3 or 4 lines long, not thickened nor fleshy; the *orifice equal*, the interior villous with reflexed hairs, in the manner of the genus; the *lobes obovate* or oblong, *obtuse, shorter than the* obovate-orbicular and deciduous *petals;* the latter nearly equal, convolute in æstivation, except the posterior, which is wholly external in most cases. *Stamens* monadelphous at the very base (or raised on a narrow annular disk), inserted on the throat of the calyx; the 14 or 15 *anterior fertile, with elongated and filiform filaments* (involute in æstivation); the *posterior* 7 *to* 10, reduced to as many rigid and *short teeth*. Ovary two-celled, with a single erect ovule in each cell, very villous, its long stipe laterally adnate to the anterior side of the calyx-tube quite up to the throat; the free side densely bearded with deflexed villous hairs. Style basal, filiform, as long as the stamens, excessively villous at the base, the upper part glabrous, the apex tipped with a simple stigma. Fruit not seen.

This species is manifestly related to *P. Jackianum*, Benth. (*Petrocarya excelsa*, Jack), and to *P. Griffithianum*, Benth.; but it has not the fleshy calyx which Bentham assigns to his section *Sarcostegia*. Having a racemose inflorescence and short pedicels, this species is convenient for determining the position of the several floral organs in relation to the bract and axis. We find the odd sepal to be anterior, with a slight obliquity: it nearly, but not exactly, subtends the ovary, as in *Leguminosæ*, being between that and the bract, but a little to the right of the median line (vide Fig. 4): thus essentially confirming the view indicated by Mr. Bentham, in Hooker's Journal of Botany, 2, p. 211.

Plate 55.—Parinarium laurinum: a flowering branch, of the natural size. Fig. 1. Stipules, and base of a leaf, showing the glands. 2. Flower-bud, with the bract and two bractlets. 3. An opening flower, with the bractlets. 4. Diagram of the flower, with the bract and bractlets. 5. A petal, from Fig. 3. 6. A flower from which the petals have fallen. 7. Anthers. 8. Vertical section of the calyx, ovary, &c. 9. Longitudinal section through the partition.—All the details enlarged.

2. HIRTELLA, *Linn.*

1. Hirtella oblongifolia, *DC.*

Hab. Brazil, near Rio Janeiro. (Perhaps a variety of *H. Americana.*) The flowers are tetrandrous.

There is besides a branchlet of a Chrysobalanaceous plant, from the Organ Mountains, near Rio Janeiro, probably a *Licania*, which I cannot identify, and the forming flower-buds are too young for investigation.

ORD. ROSACEÆ.

1. QUILLAIA, *Molina.*

1. QUILLAIA SAPONARIA, *Molina.*

Quillaia saponaria, Molina, Hist. Nat. Chil. p. 187; Hook. & Arn. Bot. Misc. 3, p. 304; Gay, Fl. Chil. 2, p. 274.
Q. Molinæ & *Q. Smegmadermos*, DC. Prodr. 2, p. 547.

HAB. Chili; common from Valparaiso to the Cordilleras above Santiago.

2. KAGENECKIA, *Ruiz & Pav.*

1. KAGENECKIA OBLONGA, *Ruiz & Pav.*

Kageneckia oblonga, Ruiz & Pav. Fl. Peruv. & Chil. Prodr. t. 37; Hook. & Arn. Bot. Misc. 3, p. 304.
K. cratægoides, Don, in Edinb. Phil. Jour. ex Hook. & Arn.

HAB. Chili: in ravines; common from Valparaiso to the lower Cordilleras.

2. KAGENECKIA LANCEOLATA, *Ruiz & Pav. l. c.*

HAB. Peru; "between Yaso and Obrajillo; rare." (Specimens not found in the collection.)

3. CLIFFORTIA, *Linn.*

1. Cliffortia ilicifolia, *Linn.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

2. Cliffortia ruscifolia, *Linn.*

Hab. Cape of Good Hope; with the preceding species.

3. Cliffortia odorata, *Linn. f.*

Hab. Cape of Good Hope; with the preceding species.

4. Cliffortia strobilifera, *Linn.*

Hab. Cape of Good Hope; with the preceding species.

5. Cliffortia sarmentosa, *Linn.*

Hab. Cape of Good Hope: on the sea-shore.

6. Cliffortia trifoliolata, *Linn.*

Hab. Cape of Good Hope, in the vicinity of Cape Town.

7. Cliffortia dentata, *Willd.*

Hab. Cape of Good Hope; with the preceding species.

8. Cliffortia falcata, *Linn. f.*

Hab. Cape of Good Hope; with the preceding species.

4. MARGYRICARPUS, *Ruiz & Pav.*

1. Margyricarpus setosus, *Ruiz & Pav.*

Hab. Rio Negro, North Patagonia; common on the sand-hills. Chili, near Valparaiso.

5. TETRAGLOCHIN, *Pœpp.*

1. Tetraglochin strictum, *Pœpp.*

Tetraglochin strictum, Pœpp. Fragm. Syn. p. 26; Gay, Fl. Chil. 2, p. 281.
Margyricarpus alatus, Gillies, in Hook. Bot. Misc. 3, p. 305.

Hab. High Andes of Peru, above Baños.

The specimen, although destitute of flowers and fruit, appears to be the same as the Chilian plant.

6. ACÆNA, *Linn.*

* *Austro-Americanæ.*

1. Acæna pumila, *Vahl.*

Acæna pumila, Vahl, Enum. 1, p. 298; Hook. f. Fl. Antarc. p. 264, t. 105.

Hab. Orange Harbour, Fuegia. (In flower and fruit.)

2. Acæna Magellanica, *Vahl.*

Acæna Magellanica, Vahl, Enum. 1, p. 297; Hook. f. Fl. Antarc. p. 267.
Ancistrum Magellanicum, Lam. Ill. Gen. t. 22, f. 2; Poir. Suppl. 1, p. 346.

Hab. Orange Harbour, Fuegia. (In flower.)

3. ACÆNA OVALIFOLIA, *Ruiz & Pav.*

Acæna ovalifolia, Ruiz & Pav. Fl. Per. & Chil. 1, p. 67, t. 103; Hook. f. l. c.
Ancistrum repens, Vent. Hort. Cels. t. 5.

HAB. Orange Harbour, Fuegia.

4. ACÆNA ADSCENDENS, *Vahl.*

Acæna adscendens, Vahl, Enum. 1, p. 207; DC. Prodr. 2, p. 593; Hook. f. Fl. Antarc. p. 268, t. 106.
Ancistrum humile, Pers. Ench. 1, p. 30.

HAB. Orange Harbour, Fuegia. (In flower and fruit.)

5. ACÆNA ANTARCTICA, *Hook. f.*

A. pumila; caulibus brevibus procumbentibus; foliis confertis; foliolis 3–4-jugis late oblongis grosse serratis medio canaliculatis subtus ad costam venasque prominentes et supra præsertim villoso-sericeis; pedunculo scapiformi; capitulo globoso; calycibus glabris; fructu obconico aristis 4 brevibus apice glochidiatis armato.

Acæna Antarctica, Hook. f. Fl. Antarc. p. 269.

HAB. Orange Harbour, Fuegia. (In fruit.)

This rare species was gathered on Staten Land by Menzies, and Hermite Island, Cape Horn, by Dr. Hooker; in both cases with the flowers and fruit fallen. Our specimens afford the fruit; but the stigma and stamens are still unknown. It is a *small* plant, with lignescent and *short procumbent stems*, clothed with the glabrous petiolar stipules, and with *crowded leaves*. *Leaflets* 3 *or* 4 *pairs*, with an odd one, 2 or 3 lines in length, subcoriaceous, elliptical or *broadly oblong, coarsely serrate* with obtuse teeth, *channelled above in the* middle; the *upper surface silky* with dense villous hairs, of a silvery-fulvous hue, partially glabrate with age, the lower similarly *silky on the very prominent midrib and straight veins*, in the intervals puberulent or glabrate. *Peduncle scape-like*, naked, slightly pubescent, in fruit 2 inches long, bearing a *globose* head of scarcely more than 2 lines in diameter. Bractlets obovate-spatulate, sparingly pilose-ciliate at the apex. *Fruiting calyx glabrous, obconical;* its small lobes oval, thickish, shorter than the four spine-like *short awns*, which are minutely *glochidiate at the apex*, and hardly as long as the fruit.

6. ACÆNA MYRIOPHYLLA, *Lindl.*

Acæna myriophylla, Lindl. Bot. Reg. sub. t. 1271; Hook. & Arn. in Bot. Misc.

HAB. Chili; in the Andes above Santiago. (Without flowers or fruit.)—Probably only a form of *A. pinnatifida*.

7. ACÆNA TRIFIDA, *Ruiz & Pav.*

Acæna trifida, Ruiz & Pav. Fl. Per. & Chil. 1, p. 67, t. 104; Gay, Fl. Chil. 2, p. 292.

HAB. Chili; common near Valparaiso.

To this belongs the Californian plant, referred to *A. pinnatifida* by Hooker & Arnott, and Torrey & Gray.

8. ACÆNA SPLENDENS, *Hook. & Arn.*

Acæna splendens, Hook. & Arn. in Bot. Misc. 3, p. 386; Gay, Fl. Chil. 2, p. 292.

HAB. Chili; on the first Cordillera above Santiago. (The flowers and fruit fallen.)

9. ACÆNA LAPPACEA, *Ruiz & Pav.*

Acæna lappacea, Ruiz & Pav. Fl. Per. & Chil. 1, p. 66, t. 103.

HAB. High Andes of Peru, between Obrajillo, Culnai, and Baños. (Also gathered by Matthews and M'Lean.)

There are fragments apparently of another species from the Andes of Peru, which is indeterminable, for the want of flowers and fruit.

* * *Novo-Zelandicæ & Novo-Hollandicæ.*

10. ACÆNA OVINA, *A. Cunn.*

Acæna ovina, A. Cunn. in Field, N. S. Wales; Benth. Pl. Hugel. p. 43.

HAB. Hunter's River, New South Wales. (Also collected by Labillardiere.)

11. ACÆNA SANGUISORBÆ, *Vahl.*

Acæna Sanguisorbæ, Vahl. Enum. 1, p. 294; DC. l. c.; Hook. f. Fl. N. Zeal. p. 54.
Ancistrum Sanguisorbæ, Linn. f. Suppl. p. 189.
A. *anserinifolium*, Forst. Char. Gen. t. 2.
A. *diandrum*, Forst. Prodr. Fl. Ins. Austr. p. 10.

HAB. Bay of Islands, New Zealand. Sydney, New South Wales.

* * * *Sandwicenses.*

12. ACÆNA EXIGUA, Sp. Nov.

A. *foliis in caudicibus multicipitibus rosulatis confertissimis; foliolis 7–8-jugis minimis confertis ovatis oblongisve sæpius bi–tridentatis seu bilobis coriaceis supra bullatis venosis glaberrimis subtus canescentibus; scapo gracili parce bracteato; spica parva cylindrica; calycis lobis 4–5 oblongis, tubo ovoideo undique setis glochidiatis armato; staminibus 2; stigmate patellæformi fimbriato.*

HAB. Sandwich Islands: on the table-land of the mountains of Kauai, in a marsh.

A diminutive species, with short *branching caudexes*, crowned with a *very dense rosulate cluster of leaves*, each half an inch or an inch long, including the petiole, which is winged for nearly its whole length by the adnate and scarious, brownish, glabrous stipules. *Leaflets* 7 *or* 8 *pairs, crowded, very small*, about a line in length, *ovate or oblong, commonly two-lobed* or *two-toothed, sometimes three-toothed*, otherwise entire, rather *coriaceous* in texture, the convex *upper surface bullate*, reticulately *veiny* under a lens, *glabrous* and somewhat shining; the *lower surface* concave, *whitened* with a very minute close-pressed pubescence, and with stouter hairs on the veins and midrib; the latter somewhat projecting into a bearded point. *Scape slender*, 4 to 6 inches high, minutely pubescent, leafless, beset with a few subulate bracts, which are chiefly opposite: from most of them in the collection the flowers and fruit have wholly fallen; but one or two, in an effete state, show the inflorescence to be a *small, cylindrical spike*, not more than half an inch in length. Flowers minute, crowded, subtended by subulate or linear bracts. *Calyx-lobes* 4 *or* 5, *oblong*, glabrous; *the ovoid tube covered with slender bristles* (as in *Euacæna*), which are minutely *retrorsely barbed at the apex*, otherwise smooth. The flowers are probably hermaphrodite: at least, in a spent flower, the remains of *two filaments* were detected, and also a sessile, dilated and *depressed, fimbriate stigma*. Anthers not seen. Mature fruit unknown.

Incomplete as the specimens are, they suffice to show that this is a new and peculiar species of *Acæna*. The leaflets are not larger than the leaves of many a *Jungermannia*, which, indeed, they considerably resemble, except in their rigidity.

7. ALCHEMILLA, *Tourn.*

1. ALCHEMILLA TRIPARTITA, *Ruiz & Pav.*

Alchemilla tripartita, Ruiz & Pav. Fl. Per. & Chil. 1, p. 68; Hook. Bot. Misc. 2, p. 218.

HAB. Andes of Peru, near Baños. (Also gathered by Cruckshanks, M'Lean, &c.)

2. Alchemilla pinnata, *Ruiz & Pav.? l. c.*

Hab. Andes of Peru; with the preceding. (Without flowers or fruit.)

8. POTENTILLA, *Linn.*

1. Potentilla procumbens, *Sibth.*

Potentilla procumbens, Sibth.; Koch; Lehm. Nov. Recen. Potentill. (1851), p. 71.
P. Tormentilla, var. *nemoralis*, Seringe, in DC. Prodr. 2, p. 574.

Hab. Madeira.

9. FRAGARIA, *Linn.*

1. Fragaria vesca, *Linn.*

Hab. Madeira. Probably indigenous.

2. Fragaria Chilensis, *Ehrh.*

Hab. Sandwich Islands: Hawaii, in moist places, on the edges of the crater Lua Pele, &c.; on Mouna Kea; and in the district of Waimea. (Specimens were gathered in the bullock-pit in which the unfortunate Douglas lost his life.) Also on the mountains of Maui.

This species was not gathered in Chili, where it appears to be spontaneous only along the coast. It is probably truly indigenous to Chiloe; as it is on the coast of California and Oregon, and apparently in the Sandwich Islands. The leaflets in the specimens from the Sandwich Islands are thick and rigid, with their lower surface and the stalks very silky-villous.

10. GEUM, *Linn.*

1. Geum Magellanicum, *Commers.*

Geum Magellanicum, Commerson, ex Pers. Ench. 2, p. 57; Hook. f. Fl. Antarc. p. 262, & Fl. N. Zeal. p. 55.
G. ranunculoides, Seringe, in Mem. Soc. Genev., & Prodr. 2, p. 551.

Hab. Bay of Islands, New Zealand.

To this species Dr. Hooker refers the *G. ranunculoides*, *G. Chiloense* or *G. Chilense*, *G. Quillyon*, and *G. intermedium* of authors, and likewise our North American *G. strictum*, Ait.,—apparently with reason: but in that case the plant should bear the latter name. He also strongly inclines to unite the whole of them to the European *G. urbanum*.

2. Geum parviflorum, *Commers.*

Geum parviflorum, Commerson, ex Smith, in Rees, Cycl.; DC. Prodr. 2, p. 552; Hook. f. Fl. Antarc. p. 263, & Fl. N. Zeal. p. 56.
G. involucratum, Juss. ex Pers. Ench. 2, p. 57; DC. l. c. p. 554.
Sieversia albiflora, Hook. f. Fl. Antarc. p. 1, t. 7?

Hab. Orange Harbour, Fuegia.

11. RUBUS, *Linn.*

1. Rubus rosæfolius, *Smith.*

Rubus rosæfolius, Smith, Ic. Pl. Ined. p. 60, t. 60; Seringe, in DC. Prodr. 2, p. 556.

Hab. Luzon, near Baños. Obrajillo, Peru. The latter doubtless a cultivated plant, as the petals are multiplied.

2. Rubus Eglanteria, *Tratt.*

Rubus Eglanteria, Trattinick, Ros. 3, p. 9; Seringe, in DC. Prodr. 2, p. 556.

Hab. New South Wales, near Sydney.

3. Rubus pinnatus, *Willd.*

Hab. St. Helena: probably an introduced plant.

4. Rubus australis, *Forst.*

Rubus australis, Forst. Prodr. Fl. Ins. Austr. p. 40; DC. Prodr. 2, p. 559; Hook. f. Fl. N. Zeal. p. 53, t. 14.
R. schmidelioides & *R. cissoides*, A. Cunn. Bot. Fl. N. Zeal., ex Hook. f.

Hab. Bay of Islands, New Zealand: various forms, either glabrous or pubescent; the leaflets ovate, lanceolate, or linear. Sydney and Hunter's River, New South Wales.

5. Rubus macropodus, *Seringe.*

Rubus macropodus, Seringe, in DC. Prodr. 2, p. 557.

Hab. Sydney and Hunter's River, New South Wales. Also "Bay of Islands, New Zealand;" but I suspect there is some misplacement in the tickets here, since no other collector has ever brought it from New Zealand, nor does Dr. Hooker mention it in his Flora of that country.

6. Rubus fruticosus, *Linn.*

Hab. Madeira: common.

7. Rubus Bergii, *Cham. & Schlecht.?*

Rubus Bergii, Cham. & Schlecht. in Linnæa, 2, p. 16; Eckl. & Zeyh. Enum. p. 262.
R. heterophyllus, E. Meyer, non Willd.

Hab. Cape of Good Hope.

8. Rubus urticæfolius, *Poir.*

Rubus urticæfolius, Poir. Dict. 6, p. 246; Seringe, in DC. Prodr. 2, p. 563.

Hab. Peru, below Obrajillo. Brazil, from Rio Janeiro to the Organ Mountains.

9. Rubus geoides, *Smith.*

Rubus geoides, Smith, Ic. Pl. Ined. t. 19; Hook. Ic. Pl. t. 495; Hook. f. Fl. Antarc. p. 263.
Dalibarda geoides, Pers.; DC. Prodr. 2, p. 568.

Hab. Orange Harbour. (With mature fruit.)

10. Rubus rugosus, *Smith.*

Rubus rugosus, Smith, in Rees, Cycl.; Wight & Arn. Prodr. Fl. Ind. Or. 1, p. 290

Hab. Singapore. Luzon. New South Wales.

To this species is referred the *R. alcææfolius*, *R. reflexus*, and *R. Hamiltonianus* of authors, as well as *R. Moluccanus* of Roxburgh. Probably it is also the Linnæan plant of the latter name.

11. Rubus tiliaceus, *Smith, l. c.*

Hab. Feejee Islands; at Ovolau and Rewa: "a climbing plant."

12. Rubus Hawaiensis, Sp. Nov. (Tab. 56.)

R. tomentoso-pubescens; caule fruticoso erecto setoso-aculeolato seu inermi; stipulis filiformibus; foliis trifoliolatis; foliolis ovatis sæpius acuminatis pinnatifido-incisis vel duplicato-dentatis (dentibus acuminatis) membranaceis supra glabratis, terminali longe petiolulato; pedunculo uni–trifloro; calyce tubo setoso, lobis ovatis integerrimis longe acuminatis petala ovata rubra æquantibus; fructu ovoideo; ovariis parce glanduloso-hispidulis demum glabratis.

Var. *β. foliis ramulisque glabratis vel glabellis.*

Hab. Sandwich Islands: in the forests and the bullock plains on Mouna Loa and Mouna Kea, Hawaii (where it was discovered by Menzies). Var. *β.* District of Waimea and Hilo, Hawaii; and in the mountains of Kauai. (Also collected, in fruit, by Gaudichaud.)

A *shrubby* species, the erect stems apparently of considerable height: a short truncheon of a stem in the collection is almost two inches in diameter! The younger branches, leaves, &c., are *tomentose-pubescent*, apparently not glandular nor viscous, flexuose, *unarmed* or frequently *aculeolate* with small and straight bristly prickles, at length glabrate. *Stipules filiform* or setaceous, 3 or 4 lines long. *Leaves trifoliolate. Leaflets ovate, acuminate* or acute, with an obtuse or truncate base, *pinnatifid-incised* or very deeply doubly toothed (the close *teeth sharply pointed*), *membranaceous*, strongly pinnately veined, the lower surface softly and usually densely tomentose, the *upper glabrate* with age; the lateral leaflets slightly petiolulate, 1½ to 2 inches long; the *terminal one long-petiolulate* (the stalk half or two-thirds of an inch long), 2½ to 3 inches in length, occasionally subcordate. *Peduncles* 1–3-*flowered*, axillary and terminal, solitary or in pairs, short; when branched the pedicels an inch or less in length, tomentose, unarmed. *Calyx* flattish, more or less tomentose externally; the short tube sparingly *setose-prickly;* the *lobes ovate, entire*, 6 or 8 lines long, tapering into a slender and *long acumination*, as long as the *broadly ovate petals*, which are of a *red* or bright purple colour, and apparently as showy as those of *R. odoratus*. Stamens and pistils very numerous. Receptacle rather hairy. *Ovaries sparsely hispid* with a few *glandular-*

tipped bristles: but the drupaceous *mature carpels glabrous*, tipped with slender styles. *Fruit ovoid*, half an inch in length and breadth, apparently red and edible: it is plainly that of a *Raspberry*, the carpels separable from the conical receptacle.

The variety, above indicated, appears to differ only in the less pubescent shoots, leaf-stalks, &c., and in the soon *glabrate leaflets*, &c. Perhaps it is a state of the species growing in deep shade.

This striking species is most related to the *R. spectabilis*, Pursh, of Northwest America, which the smoother form considerably resembles. The long-acuminate sepals, equalling the broad petals in length, and the greater prickliness, as well as the usually downy leaves, &c., serve to distinguish them. The wood of the stem is compact, with broad and conspicuous medullary rays, but no obvious annular layers. It is singular that so conspicuous a plant should have hitherto escaped notice. I believe it was gathered, however, by the late Mr. Macrae.

PLATE 56.—RUBUS HAWAIENSIS: a flowering branch and fruit, of the natural size. Fig. 1. Section of a flower. 2. A pistil. 3. Ovary, vertically divided. 4. Putamen. 5. Vertical section of a carpel, in fruit. 6. Vertical section of a seed. 7. Embryo.—The details variously enlarged.

13. RUBUS MACRÆI, Sp. Nov. (Tab. 57.)

R. tomentoso-pubescens; caulibus procumbentibus setoso-aculeolatis; stipulis subulatis; foliis caulinis trifoliolatis, ramulorum floriferorum trilobatis; foliolis rotundis ovatisve duplicato-dentatis (dentibus mucronatis) nunc incisis subcoriaceis subtus molliter canescenti-tomentosis supra glabratis, terminali sæpissime petiolulato; pedunculis unifloris; calyce inermi quinquepartito, lobis oblongis laciniato-dentatis petala (pallida) obovata sæpius emarginata adæquantibus; ovariis superne hirsutis eglandulosis.

HAB. Sandwich Islands: Hawaii, on Mouna Kea (where it was first collected by Mr. Macrae): East Maui, on the banks of the crater Haleakala.

A well-marked, *tomentose-pubescent* species, with reclined or *prostrate* stems and ascending flowering branches, *armed with weak and slender prickles*, apparently suffruticose. *Stipules subulate*, rather large, sometimes almost setaceous. *Cauline leaves trifoliolate*, or those of the short flower-bearing branches simple and *three-lobed*. *Leaflets rotund or ovate*, either obtuse or acute, 1½ to 2 inches long, thickly *doubly toothed* (the *teeth mucronate* and short), *often incised* or obscurely lobed, *rather coriaceous* in texture, *canescently tomentose-pubescent underneath*, *glabrate above;* the lateral ones slightly, the *terminal manifestly, petiolulate*, or sometimes almost sessile. *Peduncles one-flowered*, usually axillary, setose-prickly, apparently recurved after anthesis, an inch to 2 inches long, the lower ones shorter than the leaves. Flowers large, fully an inch in diameter. *Calyx five-parted* almost to the base, tomentose-pubescent, *not armed* nor glandular; the *sepals oblong*, acute or sometimes obtuse, or the innermost pointed, rather foliaceous, becoming three-quarters of an inch long after flowering, the edges strongly *serrate* or *laciniate-toothed* from the middle to the apex. *Petals obovate*, often deeply *notched* at the apex, apparently white (the colour not recorded by the collectors), *as long as the calyx*. Stamens and pistils numerous. *Ovaries hirsute*, especially towards the summit, with soft and *glandless* hairs, which persist on the ovoid unripe fruit.

This species is remarkable for the serrated sepals; a character which, although variable in degree, is presented by all the specimens seen. The petals are all imperfect in our flowering specimens. They are restored in the plate from a flower of a plant which was gathered long ago by Mr. Macrae. The flowering branch represented in the left-hand figure is also from one of his specimens.

PLATE 57.—RUBUS MACRÆI: a procumbent stem and flowering branches, of the natural size. Fig. 1. A petal. 2. Vertical section through the receptacle, &c. 3. A pistil.—The details magnified.

12. CHAMÆMELES, *Lindl.*

1. CHAMÆMELES CORIACEA, *Lindl.*

Chamæmeles coriacea, Lindl. in Trans. Linn. Soc. 13, p. 104, t. 11; DC. Prodr.

Hab. Madeira; on rocks of the coast at Funchal. (Without flowers or fruit.)

13. HESPEROMELES, *Lindl.*

1. Hesperomeles cuneata, *Lindl.*

Hesperomeles cuneata, Lindl. Bot. Reg. sub. t. 1956, in adnot.

Hab. High Andes of Peru; common from Obrajillo to Culnai.

14. OSTEOMELES, *Lindl.*

1. Osteomeles anthyllidifolia, *Lindl.*

Osteomeles anthyllidifolia, Lindl. in Trans. Linn. Soc. 13, p. 98, t. 8.

Hab. Sandwich Islands: Oahu, on the plains near Ewa, and on the coast towards Pearl River: Hawaii, in the district of Waimea, and on Mouna Loa. (Found by all collectors since the islands were first botanized upon by Nelson, in Cook's last voyage.)

The fruit is said to be "white and sweet-tasted."

ORD. MYRTACEÆ.

1. BARRINGTONIA, *Forst.*

1. BARRINGTONIA SPECIOSA, *Linn. f.*

Barringtonia speciosa, Linn. f. Suppl. p. 312; Forst. Prodr. p. 47; Guill. Zeph. Tait. p. 59, cum descr. Forst.; Wight, Ic. Pl. Ind. Or. 2, t. 547.
B. Butonica, Forst. Char. Gen. t. 38.

HAB. Society and Samoan Islands; common on the coast. Feejee Islands; "submaritime and not very common." Mangsi Islands.

2. BARRINGTONIA EXCELSA, *Blume?*

Barringtonia excelsa, Blume, Bijdr. p. 1097? Benth. in Hook. Lond. Jour. Bot. 2, p. 221.
B. racemosa, Gaud. Bot. Voy. Freye. p. 483, t. 107?

HAB. Ovolau, and Sandalwood Bay, Feejee Islands. (In flower, and with young fruit.)

This accords very well with the figure of Gaudichaud's *B. racemosa:* whether it is the plant of Blume under that name, or truly his *B. excelsa*, I cannot determine.

3. BARRINGTONIA SAMOENSIS, Sp. Nov.

B. foliis membranaceis oblongo-cuneatis oblanceolatisve acuminatis obsolete serrulatis in petiolum brevem attenuatis; racemo gracili elongato *nutante; floribus parvis; pedicellis alabastro duplo triplove longioribus; calyce quadrilobo.*

Var. *β. foliis majoribus dilatatis obovato-cuneatis; pedicellis alabastro haud longioribus.*

HAB. Upolu and Tutuila, Samoan or Navigators' Islands. *β.* Upolu.

A tree, the size not recorded, glabrous throughout. *Leaves membranaceous*, from 7 to 10, or in var. *β.* from 10 to 18 inches in length, *oblong with a cuneate base, or oblanceolate*, or in var. *β. obovate-cuneate, obsoletely serrulate*, more or less *acuminate, tapering into a short petiole. Raceme* terminal and simple, a foot or two in length, *slender, nodding*, rather closely-flowered. *Flower-buds* 3 lines in diameter, *shorter by twice or thrice than the pedicel:* but in var. *β.* the pedicels are only 3 or 4 lines long. *Calyx four-cleft*, sometimes two of the sinuses deeper than the others. Petals 5 or perhaps 6 lines long. "Stamens red," probably an inch long when expanded. Fruit not seen.

The species of *Barringtonia* are by no means well settled; but this is different from any one I have seen.

2. EUGENIA, *Mich., Linn.*

EUGENIA, Mich., Linn., Juss., St. Hil., Wight.
EUGENIA (excl. sp. Chilens. & E. Pimenta), JAMBOSA, ACMENA, & SYZYGIUM, DC.
EUGENIA, GELPKEA, STRONGYLOCALYX, JAMBOSA, CLAVIMYRTUS, & MICROJAMBOSA, Blume.
SYLLYSIUM, Meyen & Schauer.

Although strongly predisposed to receive the Candollean genera above cited, yet even the comparatively small amount of materials before me furnishes such complete gradations between them all, as to leave no doubt that Dr. Wight was justified in combining them. Neither the shape of the tube or of the limb of the calyx, nor the difference between an operculately deciduous and an expanding corolla, can be relied upon for definite characters. The recent, very careful labours of Blume (in Mus. Bot. Lugd.-Bat.) evidently lead to the same conclusion, unless we still more largely increase the number of genera, and abandon all absolute distinctions. A series of such groups may be more appropriately regarded as sections of a genus. The old genus *Eugenia* may thus be more simply and definitely characterized by its thick and large, more or less conferruminate cotyledons, including the usually short and retracted radicle; the two or three pluriovulate cells to the ovary, but the fruit only 1–2-seeded; the stamens not collected in phalanges. The last-named character barely distinguishes *Caryophyllus*. As *Jossinia* is characterized by Blume, it would also fall into *Eugenia*, except for the thick testa of the seed; but according to Wight it has foliaceous cotyledons. The seeds of the original species, however, do not yet appear to be known.

§ 1. JAMBOSA, Rumph.—*Calyx fauce ultra ovarium producta, lobis rotundatis æstivatione manifeste imbricatis. Petala in anthesin expansa.—Flores sæpissime magni vel majusculi.*

1. Eugenia (Jambosa) Malaccensis, *Linn.*

Eugenia Malaccensis, Linn. Spec. Pl. p. 672; Wight, Ill. Ind. Bot. 2, t. 98.
Jambosa domestica, Rumph. Herb. Amb. 1, p. 127, t. 37; Blume, Mus. Bot. p. 91.
J. Malaccensis, DC. Prodr. 3, p. 287, et Auct.

Hab. Feejee, Samoan, Society, and Sandwich Islands: introduced. "Cultivated and intrusive." Pickering.

The imperfect specimen from Tahiti, like that gathered by M. Mœrenhout and mentioned by Guillemin (in Zeph. Tait. p. 59), would seem to belong to a different species, having oblong-lanceolate, acuminate, almost membranaceous, and pellucid-punctate leaves. But Dr. Pickering, who was familiarly acquainted with the *Red Rose-Apple* in different habitats, appears not to have distinguished it.

2. Eugenia (Jambosa) Richii, Sp. Nov. (Tab. 58.)

E. ramulis ultimis quadrangulatis sæpius argute marginatis; foliis brevi-petiolatis ovatis oblongisve obtusis basi subcordatis coriaceis venosis (venis infra marginem laxe arcuato-anastomosantibus) impel-

lucidis opacis; cyma pluriflora; pedunculis partialibus subgracilibus; calycis tubo turbinato, lobis 4 subæqualibus.—Variat: foliis maximis ovatis fere pedalibus, seu spithamæis, seu anguste oblongis nunc acutiusculis 5–9-pollicaribus.

Hab. Feejee Islands: at Ovolau, Rewa, Somu-somu, Muthuata, &c.

A "tree 20 feet high," glabrous, apparently varying considerably in the size and shape of the leaves. *Ultimate branches* more or less *four-angled and sharply margined* by 2 salient lines decurrent from the base of each petiole: these are sometimes so prominent as to form wings, while on other branches of the same individual they are obsolete or wanting. *Leaves coriaceous* in texture, and *dull, ovate*, or more commonly *oblong*, varying from 5 inches to nearly a foot in length, and from 2 to 6 inches in width, *obtuse, cordate at the base* by a small sinus, rather sparsely feather-veined and sparingly reticulated, the *veins rather obscurely anastomosing within the margin, opaque*, only the thinner states showing pellucid dots: the petiole 3 to 6 lines long. *Cymes several–many-flowered*, terminal, or sometimes axillary; the common peduncle from one to two inches long, articulated, trichotomous, with the *rather slender partial peduncles* usually again divided, about an inch long; the ultimate divisions terminated either by solitary, or by three sessile, articulated flowers. *Tube of the calyx turbinate*, half an inch or less in length; the short *lobes* 4, *nearly equal*, rounded, apparently not enlarged in fruit. Petals probably rose-colour. Stamens and style from an inch to an inch and a half long. Ovary two-celled. Ovules numerous. Fruit not collected.

Plate 58.—Eugenia (Jambosa) Richii: a flowering branch, of the natural size. Fig. 1. Vertical section of a flower, enlarged. 2. Transverse section of the ovary.

3. Eugenia (Jambosa) quadrangulata, Sp. Nov.

E. ramulis ultimis tetragonis, angulis argute marginatis alatisve; foliis brevissime petiolatis oblongo-lanceolatis acutis vel acuminatis basi obtusis supra lucidis chartaceis pellucido-punctatis crebre penninerviis;

cyma multiflora; pedunculi communi partialibusque brevissimis, fructiferis incrassatis; calycis tubo turbinato, limbo quadrifido; fructu obovoideo-urceolato.

HAB. Ovolau, Feejee Islands; common in woods.

This is said to be a "shrub, with a weak stem, 10 to 15 feet high; the young stems square." The ultimate branchlets are *sharply four-angled, the angles strongly margined, or often winged. Leaves chartaceous* in texture, rather *lucid above*, glabrous, as is the whole plant, *oblong-lanceolate*, with a more or less *pointed apex* and an *obtuse base*, on a *very short petiole* (of about 2 lines in length): they are 7 to 9 lines long, 2 or 3 wide, *pellucid-punctate* by transmitted light, rather *closely feather-veined:* the veins running into a submarginal vein. There are only fruiting specimens in the collection, or enlarged ovaries from which the petals, stamens, and style have entirely fallen. The *cyme* is terminal and solitary, *many-flowered* and apparently dense, *very short-peduncled*, its primary, secondary, and tertiary branches all very short (2 or 3 lines in length) and much thickened. The immature fructiferous *calyx* is *turbinate* and somewhat clavate, 8 or 9 lines long, terete, smooth and even, with a short *four-cleft* limb; the lobes coriaceous, rounded. Ovary two-celled. Ripe *fruit obovoid and urn-shaped*, an inch in length, "red," crowned with the erect calyx-lobes, one-celled, one-seeded. Cotyledons thickened, corneous, united.

This should be compared with *Jambosa pterocaulis* of Korthals, which I know only by the brief phrase copied by Walpers, where the leaves are said to be cordate at the base.

4. EUGENIA (JAMBOSA) NEUROCALYX, Sp. Nov. (Tab. 59.)

E. ramulis teretibus; foliis brevissime petiolatis elongato-oblongis seu elliptico-lanceolatis obtusissimis basi subcordatis chartaceis crebre penninerviis; floribus in capitulum sessile congestis; calycis tubo cylindraceo pluricostato, limbo ampliato fructifero crateriformi quadrilobo.

HAB. Feejee Islands, at Muthuata and Ovolau: "planted near houses."

The specimens of this remarkable species are past flowering and with immature fruit. *Branches terete*, glabrous, like the whole plant. *Leaves chartaceous* in texture, some of them obscurely pellucid-punctate, rather lucid above, *elongated-oblong or elliptical-lanceolate*, 6 to 9 inches long, about 2 inches wide, *very obtuse, subcordate at the base, on a very short petiole* (of only a line and a half in length), *closely* feather-veined; the primary veins confluent into a lateral vein within the margins. *Flowers* 6 to 10, or perhaps more, large, *sessile*, aggregated into a terminal, or sometimes axillary, *sessile capitulum*. *Calyx-tube* after anthesis 6 or 7 lines long, or later 8 or 9 lines long, *cylindraceous*, obtuse at the base, *ribbed with* 10 *or* 12 *salient nerves*, above dilated into an *expanded crateriform limb*, which becomes an inch in diameter, is lined with a broad and depressed disk, and cleft into 4 spreading persistent lobes. Petals and stamens not seen. The persistent style 2 to 2½ inches long. Stigma minute. Ovules numerous in each cell.

Plate 59.—Eugenia (Jambosa) neurocalyx: branches, past flowering, of the natural size. Fig. 1. Vertical section of the calyx and ovary. 2. Transverse section of the ovary, enlarged.

5. Eugenia (Jambosa) gracilipes, Sp. Nov.

E. ramulis gracilibus teretibus; foliis subsessilibus lanceolato-oblongis subacuminatis basi parum cordatis chartaceis pellucido-punctatis penninerviis; pedunculis terminalibus filiformibus folia superantibus uni–trifloris; calycis tubo turbinato basi acuto, lobis 4 æqualibus.

Hab. Feejee Islands, at Sandalwood Bay and Ovolau.

Apparently a shrub, with *slender, terete branches*, glabrous. *Leaves chartaceous* or nearly membranaceous in texture, opposite, *lanceolate-oblong, somewhat acuminate, slightly cordate at the base, subsessile* (the petiole when manifest only a line long), 2½ to 4½ inches long, 12 to 18 lines wide, somewhat lucid above, more or less manifestly pellucid-punctate, closely *feather-veined*, the veins confluent into an indistinct infra-marginal vein. *Peduncles terminal, filiform, exceeding the leaves* (2 or 3 inches long), *one-flowered*, or commonly di–trichotomous, with the pedicels an inch or two in length, minutely bracteolate at the articulation with the *acute base of the turbinate calyx-tube*, which is only 5 lines long after anthesis. Calyx-lobes 4, equal, rounded, barely 2 lines long. Stamens 8 lines long. Style after anthesis an inch and a half long. Ovary two-celled; the cells many-ovuled. Fruit unknown.

This is apparently related to *Jambosa hypericifolia*, DC., from Java; which, however, is said to have large flowers, on peduncles only an inch long and shorter than the leaves; the latter 4 to 7 inches long, and not dotted.

6. EUGENIA (JAMBOSA) AUSTRALIS, *Wendl.*

Eugenia australis, Wendl.; Link, Enum. Hort. Berol. 2, p. 28; Colla, Hort. Ripul. App. 1, t. 8.
E. myrtifolia, Sims, Bot. Mag. t. 2230; Lodd. Bot. Cab. t. 525.
Jambosa australis, DC. Prodr. 3, p. 286.

HAB. New South Wales.

This is mentioned by Blume as apparently making a transition from *Jambosa* to his *Clavimyrtus*.

§ 2. EUGENIA, DC.—*Calyx tubo subrotundo, fauce ultra ovarium vix aut ne vix producta, limbo 4–5-partito, lobis sæpius leviter imbricatis. Petala in anthesin expansa. Testa seminum tenuis.—Flores parvuli.*

* *Oceanicæ.*

7. EUGENIA RARIFLORA, *Benth.* (Tab. 60.)

E. foliis coriaceis ovalibus late ovatisque breviter petiolatis glabris subvenosis supra nitidis marginibus subrevolutis; pedicellis unifloris solitariis vel geminis (nunc quaternis quinisve ad apicem ramorum) ramulisque appresse puberulis folio brevioribus; flore bibracteolato; calycis tubo globuloso-obconico sericeo-pubente limbo inæqualiter quadripartito subæquilongo, lobis rotundatis petalis brevioribus; bacca sub-

globosa.—Variat: foliis crasso-coriaceis basi rotundatis (*ut in spec. Benth. descr.*), *seu ovali-orbiculatis basi acutis apice obtusissimis sæpius emarginatis, seu tenuioribus ovalibus oblongisve nunc obtuse acuminatis.*

Eugenia rariflora, Benth. in Hook. Lond. Jour. Bot. 2, p. 221.
Jossinia cotinifolia, Hook. & Arn. Bot. Beech. Voy. p. 62; Guill. Zeph. Tait. p. 58, excl. syn.

HAB. Feejee Islands (where it was gathered by Hinds and Barclay): common on the coasts. Upolu, Samoan Islands. Tahiti, Society Islands.

Shrub 4 to 6 feet high; the *young branchlets* and the nascent foliage *puberulent* with an appressed and fine silky pubescence, glabrate when old. *Leaves coriaceous*, sometimes thick, oftener rather thin, *glabrous*, or occasionally with a fine pubescence on the midrib beneath, *shining above*, paler and dull underneath, *oval or broadly ovate*, sometimes verging either to obovate or to oblong, *either rounded or acute at the base, obtuse, obtusely somewhat pointed or sometimes notched at the apex, rather veiny*, the thinner states pellucid-punctate, the thicker with more or less revolute margins, 2 or 3 inches long, and from one to 2½ inches wide; the petiole 2 or 3 lines in length. *Pedicels one-flowered, solitary or in pairs* in the axils of the leaves, or *sometimes* 4 *or* 5 *together at the summit of the branches*, slender, 6 to 14 lines long, *puberulent, bibracteolate* at the apex, and these articulated with the flower. Bractlets subulate, small. *Calyx-tube* between *globose-obovoid and obconical, silky-pubescent* when young; the *limb four-parted* almost to the ovary; the *lobes fully as long as the tube, rotund*, strongly imbricated in æstivation (two exterior and two interior) *unequal*, becoming oval or oblong with age. Petals white, oval or oblong, 4 lines long, somewhat exceeding the lobes of the calyx, expanding, deciduous. Stamens very numerous, as long as the petals, uniformly inserted over a broad and flat puberulent disk, free. Style single: stigma entire. Ovary two-celled. Ovules numerous, crowded on axile placentæ, angled by mutual pressure, amphitropous. *Berry subglobose*, glabrous, apparently rather dry, crowned by the persistent lobes of the calyx, from half an inch to three-fourths of an inch in diameter, usually two-celled and two-seeded, when it is often somewhat didymous in the dried state and broader than long, or by abortion one-celled and one-seeded. Seed globose, large, filling the cell, with a very thin and membranous testa. Cotyledons very thick and fleshy, conferruminate; the very short radicle hidden.

This appears to be a pretty widely diffused, and somewhat variable, Oceanic species, which may have been formerly described under some other name. It has been taken for a *Jossinia* by Hooker and Arnott, &c., and it accords with Blume's character of that genus, except that the seed has a very thin testa. If the fruit of the genuine *Jossiniæ* of Mauritius, &c., be as it is characterized by Blume (in Mus. Bot. Lugd.-Bat. p. 119), that genus is indeed near to *Eugenia*, and not to be definitely distinguished by either of the characters relied upon. For the lobes of the calyx are imbricated in æstivation in various degrees in numerous American *Eugeniæ*, and in some of them the stamens are inserted over a broad disk.—The plate, representing (not particularly well) only one form of this species (that with thick and rounded or emarginate leaves), was not made under my superintendence. I have merely added some sections of the fruit.

PLATE 60, *A*.—EUGENIA RARIFLORA (mal.). Fig. 1. A flower-bud, magnified. 2. The same, with part of the calyx and disk cut away, and the petals with most of the stamens removed. 3. The ovary, transversely divided, magnified. 4. Fruit, of the natural size. 5. A two-celled, and 6, a one-celled fruit and seed, transversely divided.

* * *Brasilienses.* (EUGENIÆ VERÆ.)

8. EUGENIA UNIFLORA, *Linn.*

Eugenia uniflora, Linn. Spec. Pl. ed. 1, p. 470; St. Hil. Fl. Bras. Mer. 2, p. 348.
E. Michelii, Lam. Dict. 3, p. 203; DC. Prodr. 3, p. 263; Blume, Mus. Bot. p. 86.

HAB. Rio Janeiro, Brazil; common along the shore of the bay.

9. EUGENIA NEMORALIS, *DC.? l. c.*

HAB. Organ Mountains, Brazil.

10. EUGENIA BRASILIENSIS, *Lam.*

Eugenia Brasiliensis, Lam. l. c.; Cambess. in St. Hil. Fl. Bras. 2, p. 354, t. 152; Hook. Bot. Mag. t. 4526.

HAB. Rio Janeiro: along the shore.

11. EUGENIA ROTUNDIFOLIA, *Casaretto?*

Eugenia rotundifolia, Casaretto, Stirp. Nov. Bras. Dec. 4, p. 40?

HAB. Rio Janeiro; with the preceding. (In fruit only.)

12. EUGENIA XANTHOXYLOIDES, *Camb.*

Eugenia xanthoxyloides, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 366, ex char.

HAB. Near Rio Janeiro. (In young fruit.)

13. EUGENIA TENELLA, *DC.*

HAB. Organ Mountains, Brazil, in the vicinity of Rio Janeiro.

14. EUGENIA SALZMANNI, *Benth.*

Eugenia Salzmanni, Benth. in Hook. Jour. Bot. 2, p. 319.

HAB. Organ Mountains, Brazil.

15. EUGENIA ARENARIA, *Camb.*

Eugenia arenaria, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 349?

HAB. Rio Janeiro, Brazil.

There are besides incomplete and indeterminable specimens of two or three more *Eugeniæ* in the Brazilian collection.

§ 3. SYZYGIUM, Gærtn., excl. spec. (*Syzygium* & *Acmena*, DC., Endl. *Syllysium*, Meyen & Schauer.)—*Calyx tubo turbinato obovato vel clavato, fauce ultra ovarium modice producta, margine repando-truncato vel subquadrilobo. Petala in calyptram pl. m. coalita, sub anthesi dejecta, rariusve expansa sed caduca, interdum abortiva. Seminis testa tenuis.*

Only a slight artificial character separates *Acmena* of DeCandolle from *Syzygium*, and that an inconstant one in certain species, which cast off their petals indifferently either before or at the time of expansion. If *Acmena* be retained as a subgenus, therefore, it were doubtless better to refer to it, as Wight has done, species which throw off their corolla unexpanded, but which have the elongated calyx-tube. *Acmena* would thus constitute a group between *Clavimyrtus* and *Syzygium*, but passing by continuous gradations into the latter.

* *Novo-Hollandicæ; petalis parvis in anthesin expansis.* (ACMENA, DC.)

16. EUGENIA (ACMENA) SMITHII, *Poir.*

Eugenia Smithii, Poir. Dict. Suppl. 3, p. 127.
E. elliptica, Smith, in Trans. Linn. Soc. 3, p. 281, non Lam.
Metrosideros floribunda, Smith, l. c. p. 267; Vent. Hort. Malm. t. 75.
Acmena floribunda, DC. Prodr. 3, p. 262.

HAB. Sydney, New South Wales. (In flower.)

* * *Novo-Zelandicæ; floribus forte polygamis, petalis nonnunquam expansis.*

17. EUGENIA (SYZYGIUM) MAIRE, *A. Cunn.*

Eugenia Maire, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 115; Hook. f. Fl. N. Zeal. p. 71.

HAB. Bay of Islands, New Zealand.

The specimens, in flower only, appear to have sterile ovaries.

although they contain a few ovules. The calyx is nearly as in the foregoing: its margin is obscurely five-toothed. The petals sometimes expand and fall separately, but more commonly are thrown off together in anthesis, although slightly if at all coalescent.

* * * *Sandwicenses; an petalis expansis?*

18. Eugenia (Syzygium) Sandwicensis, Sp. Nov.

E. ramulis ultimis tetragonis, angulis argute marginatis; foliis obovatis oblongisve basi cuneatis apice rotundatis vel obtusis pellucido-punctatis subtus pallidioribus venis tenuibus crebre penninerviis reticulatis; pedunculis axillaribus folio brevioribus; cyma trichotoma pluriflora; pedicellis brevissimis; calyce turbinato, limbo brevissimo quadrilobo staminibus pauciusculis vix breviore; bacca globosa.

Var. *β. foliis minoribus nunc obovato-ellipticis aut ovalibus.*

Hab. Oahu, Sandwich Islands; on the mountains behind Honolulu: both forms. (Also gathered by Gaudichaud, Macrae, &c.) Island of Kauai: foliage only.

The typical form (of which alone the fruit was collected) is said to be a tree, of 20 feet in height; while what I take for merely a small-leaved variety of the same is mentioned, if I rightly identify it, as a low shrub. Branches, as well as the whole plant, glabrous; the leafy *branchlets four-sided, with sharply margined angles. Leaves* coriaceous, not very thick, *obovate or oblong, cuneate at the base*, 3 to 4½ inches long, or in the variety inclining to *obovate-elliptical or oval*, and only 1½ to 2 inches long, all very *obtuse or rounded at the summit*, green above, somewhat pale underneath, *pellucid-punctate, copiously feather-veined with fine veins*, connected by reticulated veinlets on the under surface, and within the margins confluent into the usual false vein. Petiole 3 or 4 lines long. *Peduncles axillary*, solitary, rather slender, angled, *shorter than the leaf*, bearing a small, once or twice *trichotomous cyme*, of several or numerous flowers, *on very short pedicels*. Flower-buds a line and a half long, subclavate or *turbinate; the limb of the calyx very short, but four-lobed*, the sinuses extending, however, nearly to the edge of the subcampanulate disk. Petals 4, not over a line long, *probably expanding* in anthesis, caducous. *Stamens rather few*, apparently about 20, *little longer than the lobes of the calyx*, less than a line long, inserted on the edge of the disk: filaments glandular-dotted. Style shorter than the stamens. Ovary two-celled, with 10 or more ovules in each cell. *Berry globular*, "as large as a cherry," containing one or two seeds, which, as likewise the embryo, accord with those of *Eugenia*.

This is one of the connecting forms between *Eugenia*, *Acmena* and *Syzygium*; with the habit rather of the latter.

The collection from Oahu contains the foliage only of another Myrtaceous plant, probably a *Eugenia*.

* * * * *Malaysianæ*.

19. Eugenia (Syzygium?) Zeylanica.

Myrtus Zeylanica, Linn. Spec. Pl. p. 472 (Herm. Hort. Lugd. t. 435).
Syzygium Zeylanicum, DC. Prodr. 3, p. 260; Wight & Arn. Prodr. Ind. p. 330; Wight, Ic. Pl. Ind. Or. 1, t. 73.
Acmena? parviflora, DC. Prodr. 3, p. 462.

Hab. Singapore.

The limb of the calyx is "evidently five-lobed," as DeCandolle remarks; but the corolla appears to fall off as a lid. It would perhaps fall into Blume's genus *Microjambosa*.

20. Eugenia (Syzygium) Benthamii.

Syzygium nitidum, Benth. in Hook. Lond. Jour. Bot. 2, p. 221.

Hab. Mangsi Islands, in the Sooloo Archipelago. (Also? Singapore: foliage only.)

There are 8 or 10 ovules in each cell of the ovary. In Mr. Bentham's plant, the cells are said to contain only two or three ovules.

* * * * * *Polynesicæ.*

† *Flores parvi vel parvuli.*

21. Eugenia (Syzygium) inophylloides, Sp. Nov.

E. foliis ovalibus oblongisve basi acutis apice subito in acumen obtusum productis coriaceis supra nitidis venis subtransversis tenuibus creberrime lineato-penninerviis reticulatis in venam margini parallelam confluentibus; cymis parvis terminalibus foliis brevioribus confertifloris; calycis margine repando-quadridentato.

Hab. Tutuila, one of the Samoan or Navigators' Islands; common on a wooded ridge, at the elevation of 500 feet.

"A small tree," in foliage, &c., considerably resembling *E.* (*Syzygium*, DC.) *inophylla*, Roxb. Branchlets slender, slightly angled, glabrous, as is the whole plant. *Leaves oval, oblong* or elliptical, 2 or 3 inches long, 15 to 18 lines wide, very *abruptly acuminate* into a narrow but *obtuse apex* of 2 or 3 lines in length, acute or abruptly contracted at the base into a petiole of only 2 or 3 lines long, *coriaceous, shining* on the upper surface, the lower dull, nervosely and *very closely feather-veined with fine and nearly transverse parallel veins*, which are likewise more or less *reticulated* in narrow areolæ, and just within the margin confluent into a rather conspicuous false vein. *Cymes terminal*, corymbose, short-peduncled, scarcely well developed in the specimens (which bear only flower-buds), but shorter than the leaves, the divisions all very short; the *flowers crowded*, short-pedicellate; barely a line and a half long. *Calyx* turbinate, with a minutely but distinctly repand-four-toothed margin. The inflorescence is too young to ascertain whether the corolla falls off like a lid. Ovules several in each cell.

22. Eugenia (Syzygium) Brackenridgei, Sp. Nov. (Tab. 61.)

S. ramis validis; foliis oblongo-cuneatis vel obovatis obtusissimis in petiolum attenuatis crasso-coriaceis supra lucidulis creberrime penni-

nerviis, venis in venam intramarginalem decurrentibus, venulis reticulatis; cyma terminali sessili fastigiata, divisionibus repitito-trichotomis brevibus incrassatis apice glomeruliﬂoris; calycis margine repando-quadrilobo.

Hab. Feejee Islands: on Ovolau, at the elevation of 1,500 feet; also lower.

A tree, the larger form 30 feet high, glabrous throughout; the flowering *branches stout*, obscurely angled. *Leaves* varying in size in different specimens, from 2 to 6 inches, or on sterile shoots even 9 inches in length, *thick and coriaceous, somewhat shining above*, dull and rather paler underneath, punctate, *obovate with a cuneate base, oblong-cuneate*, or oblong-oblanceolate, *very obtuse* or even retuse at the apex, contracted at the base into a petiole half an inch long; the midrib stout: from it proceed from 25 to 50 slender but rather conspicuous straight veins on each side, which are decurrent into a direct intramarginal vein, and numerous interposed veinlets, which are more or less reticulated. *Cyme terminal and sessile*, many-flowered, dense, *flat-topped, repeatedly trichotomous*, its ramifications all *thickened* and angled; the primary and secondary rays about half an inch long; the others much shorter, usually very short, articulated, terminated by several sessile *flowers in a cluster*. Bracts and bractlets very short, thick, round-ovate, rather persistent. Unexpanded flower-buds (which alone occur on the specimens) a quarter of an inch long, fleshy, glabrous, turbinate. Limb of the *calyx repandly four-lobed;* the lobes very short and broad indeed, but distinct, rounded, two of them exterior and two interior in æstivation. After anthesis the short calyx-lobes probably become obsolete, as in *S. nitidum* and other species. Corolla forming a short umbonate operculum; the petals separable, but evidently falling away in connexion without expanding. Stamens very numerous, inflexed in æstivation, in the manner of the genus, into the deep throat of the calyx. Style subulate: stigma obtuse. Ovary two-celled, with very thick walls. Ovules numerous (12 or more) in each cell. Fruit unknown.

Plate 61, *A.*—Eugenia (Syzygium) Brackenridgei: branches, of the smaller and the largest-leaved forms, of the natural size. Fig. 1. Flower-bud, with the operculate corolla detached. 2. Vertical section of the same. 3. Transverse section of the ovary.—The details enlarged.

23. EUGENIA (SYZYGIUM) CONFERTIFLORA, Sp. Nov. (Tab. 61.)

E. foliis obovatis vel suboblongis retusis basi in petiolum brevem angustatis coriaceis pallidis tenuiter penninerviis, venis vix reticulatis in venam intramarginalem confluentibus; cymis terminalibus et in axillis supremis compositis fastigiatis densifloris folia vix superantibus, divisionibus primariis gracilibus vix angulatis, ultimis brevibus apice glomeruliftoris; floribus parvis; calycis margine quadrilobo.

HAB. Ovolau, Feejee Islands.

Apparently a shrub or small tree, glabrous, with rather slender and terete, gray branches; the new shoots slightly ferrugineous. *Leaves* crowded, 1½ to 2½ inches long, *obovate*, varying to *oblong*, but all *narrowed at the base into a short petiole*, obtuse or mostly *retuse* at the apex, *coriaceous* but thin, dull and *pale* both sides, or the upper at first somewhat lucid, scarcely punctate, rather closely feather-veined, the veins parallel, almost transverse, slender, little reticulated, confluent into a false vein within the margin. *Cymes terminal and in the uppermost axils, compound, fastigiate, dense,* more or less peduncled, *little exceeding the leaves,* its *principal divisions slender, slightly angled,* not over half an inch long, minutely lepidote and rusty; the successive ones shorter; the ultimate ones with the subsessile and *small flowers densely clustered* at their apex. Bracts very small, ovate, obtuse. None of the flowers are expanded in the specimens. Flower-buds a line and a half long. *Calyx* turbinate, slightly produced beyond the ovary; the thin *margin distinctly four-lobed;* the lobes short and rounded. Corolla convex in the bud, perhaps falling away as a lid; but the petals are readily separable. Ovary two-celled; the cells with about 15 ovules. Fruit unknown.

PLATE 61, *B.*—EUGENIA (SYZYGIUM) CONFERTIFLORA: a branch with flower-buds, of the natural size. Fig. 1. Flower-bud, with the operculate corolla detached. 2. Vertical section of the same. 3. Transverse section of the ovary.—The details enlarged.

24. EUGENIA (SYZYGIUM) EFFUSA, Sp. Nov.

E. foliis obovatis subretusis basi acutis breviter petiolatis coriaceis opacis, venis haud perspicuis; cymis terminalibus decompositis corymbosis diffusis laxe multifloris; pedunculis folia superantibus, primariis et secundariis gracilibus acute tetragonis; calycis margine repando.

HAB. Sandalwood Bay, Vanua-levu, Feejee Islands.

Probably a small tree (the size not recorded), glabrous throughout, with slender ash-gray branches: the ultimate branchlets somewhat four-angled, very leafy. *Leaves obovate*, or elliptical-obovate, an inch and a half long, very obtuse, *somewhat retuse*, all narrowed and *acute at the base, short-petioled, coriaceous* but not very thick, *opaque*, dull, punctate; the midrib conspicuous; the *veins scarcely visible;* a very obscure false vein close to the revolute margin. *Cymes terminal, decompound*, 3 or 4 inches long, trichotomous, *diffusely spreading, loosely many-flowered: peduncles* or primary branches of the inflorescence 1½ to 2 inches long, slender, as also their successive spreading divisions, *acutely four-angled;* the ultimate pedicels a line or two in length. Bractlets minute, caducous. Flower-buds a line long: most of the specimens are past anthesis. *Calyx* turbinate; the free *margin* merely repand, dilated after flowering. Corolla hemispherical in the bud, falling off unopened. Stamens rather short. Ovules 8 to 10 in each cell. Fruit not seen.

25. EUGENIA (SYZYGIUM) AMICORUM, Sp. Nov. (Tab. 62.)

E. foliis oblongo-lanceolatis utrinque subacuminatis subcoriaceis opacis creberrime ac tenuiter penninerviis reticulatis; cymis terminalibus decompositis effusis multifloris folia æquantibus; pedunculis primariis et partialibus gracilibus compressis; floribus pedicellatis; alabastris subglobosis; calycis margine repando; fructu depresso-globoso.

HAB. Tongatabu (in flower). Feejee Islands (in fruit).

A tree or shrub (the size not recorded), glabrous throughout, with slender, terete branches and branchlets. *Leaves oblong-lanceolate, subacuminate at both ends*, or sometimes obtuse, 3 to 5 inches long, *rather coriaceous*, usually dull and pale both sides, *opaque*, scarcely punctate, *closely feather-veined, the reticulated veins* slender but conspicuous, especially underneath, oblique, the intramarginal false vein rather obscure. Petiole 2 to 5 lines long. *Cymes terminal, decompound, effusely many-flowered, equalling the leaves*, somewhat paniculate; the *primary and partial peduncles slender, compressed*, about an inch long; the ultimate and penultimate divisions umbellately fascicled: pedicels one or 2 lines long. Bracts and bractlets very caducous, probably minute. *Flower-buds globular*, scarcely a line in diameter. *Calyx* with a *repandly four-lobed* margin. Petals small, cohering in a lid, which falls off in anthesis. Stamens only a line long. Ovules about 7 in each cell. *Fruit a depressed-globose* berry, 3 lines in diameter, one-celled, one-seeded; the margin of the calyx truncate, not produced. Seed globose; the thick cotyledons peltately attached to the slender included radicle.

This may be the *Eugenia? paniculata*, mentioned but not characterized by Forster (Prodr. p. 90, not of Lam.), so far as can be judged from some notes on an imperfect original specimen, although that has nearly sessile leaves. The *Syzygium paniculatum* of Gærtner, as Mr. Bennett obligingly informs me, is founded neither on Forster's specimens, nor on a species from Isle Bourbon, as DeCandolle supposed, but on a widely different plant, of uncertain genus, collected at Botany Bay, by Banks and Solander.

PLATE 62.—EUGENIA (SYZYGIUM) AMICORUM: a flowering branch, of the natural size. Fig. 1. Flower, the operculate corolla detached. 2. Vertical section of a flower-bud. 3. Transverse section of the ovary. 4. Fruit, of the natural size. 5. Transverse section of the same, and of the embryo. 6. The embryo. 7. Same, with the cotyledons separated.—The analyses magnified.

26. EUGENIA (SYZYGIUM) RUBESCENS, Sp. Nov. (Tab. 63.)

E. foliis oblongis seu lanceolato-ellipticis utrinque acuminatis subcoriaceis opacis crebre ac tenuiter penninerviis; cymis terminalibus paniculato-decompositis patentibus folia multo superantibus; pedunculis primariis *et partialibus gracilibus teretiusculis; calyce clavato-turbinato rubescente, margine tenui repando-subquadrilobo.*

Hab. Ovolau, Feejee Islands; in woods, at the height of 1,500 feet.

Probably a tree (the size not recorded), glabrous throughout, with slender terete branches and branchlets. *Leaves oblong or elliptical-lanceolate, more or less acuminate at both ends*, about 3 inches long by 12 to 20 lines in width, *rather coriaceous, opaque*, pale beneath, dull above, slightly punctate, *closely feather-veined* as in the preceding species, but the *slender veins* less oblique and reticulated; the intramarginal false vein inconspicuous. Petiole 3 or 4 lines long. *Cyme terminal, decompound, paniculate, spreading*, very many-flowered, about 6 inches in length and breadth; the *peduncles* and their divaricate divisions *slender, almost terete;* the pedicels slender, one-flowered, or oftener three-flowered at their apex. Bracts and bractlets minute, very caducous. *Calyx turbinate-club-shaped* (dilated at the summit, the tube tapering down to the articulation at its pedicelliform base), *tinged with red or purple*, 2½ lines long, produced beyond the ovary into a campanulate cup; *the thin margin repandly four-lobed;* the lobes very short, at length deciduous. Petals flesh-colour, small, lightly coherent into a lid which falls off without expanding. Stamens flesh-colour, nearly 3 lines long. Ovary two-celled. Ovules 8 or 10 in each cell. Fruit not seen.

In the form of the calyx, as well as in foliage and habit, this species bears no slight resemblance to *Eugenia Smithii*, the *Acmena floribunda* of DeCandolle, with which it is certainly congeneric, although the petals are lightly coherent and are thrown off without expanding.

Plate 63.—Eugenia (Syzygium) rubescens: flowering branch, of the natural size. Fig. 1. Flower-bud. 2. Expanded flower, with the corolla, 3, detached. 4. Vertical section of a flower. 5. Transverse section of the ovary.—The details magnified.

27. Eugenia (Syzygium) corynocarpa, Sp. Nov. (Tab. 64.)

E. foliis elliptico-lanceolatis oblongisve subacuminatis basi acutis breviter *petiolatis fere membranaceis laxe penninerviis, venis intra marginem arcuato-anastomosantibus; cymis paniculatis decompositis folia superantibus; pedunculis partialibus gracilibus divaricatis; calyce clavato, limbo subintegro; fructu clavato-fusiformi; semine oblongo.*

Hab. Feejee, Samoan or Navigators' (and Society?) Islands. (Probably through some mistake one of the specimens is ticketed, "Tahiti.")

Apparently a tree (the size not recorded), with slender and spreading terete branches, glabrous throughout. *Leaves nearly membranaceous* in texture, dull both sides, scarcely paler beneath, *elliptical-lanceolate or oblong, more or less acuminate, acute at the base,* about 4 inches long and an inch and a half wide, on a short petiole of a line or two in length, somewhat pellucid-punctate, *loosely feather-veined;* the veins rather conspicuous, sparingly reticulated underneath, mostly confluent into an undulate false vein a little distance within the margin. *Cymes* terminal and sometimes axillary, ample, *decompound, paniculate,* diffuse, 5 to 8 inches in length, peduncled; the *slender partial peduncles divaricately spreading,* terete, many-flowered; the ultimate divisions 3–5-flowered. Bracts and bractlets minute, caducous. Flowers subsessile on the ultimate ramifications, divergent; the *flower-buds club-shaped,* 2 to 3 lines long, including the pedicel-like base. *Calyx clavate;* the summit produced beyond the ovary and subglobose in the bud, dilated after anthesis; the *margin* truncate, *nearly entire,* or obscurely repand-four-toothed, the broad teeth at length deciduous. Corolla of 4 rounded small petals, coherent in a lid, which falls off entire in anthesis. Stamens numerous, inserted just within the edge of the calyx, not collected in phalanges, inflexed in æstivation, 2 to 3 lines long. Style as long as the stamens: stigma simple. Ovary two-celled, with 8 or 10 ovules in each cell. *Fruit* fleshy, becoming dry? *clavate or spindle-shaped,* almost an inch long, 3 or 4 lines wide, one-celled, one-seeded. *Seed oblong,* with a very thin testa. Cotyledons oblong, fleshy, not very thick, not conferruminate, but sinuously embracing each other, peltately attached near their middle to the slender and straight, included, superior radicle. The fruit as well as the ovary is inodorous and tasteless.

This ambiguous plant has the embryo as well as the elongated calyx-tube of *Caryophyllus*, but the other characters are those of *Syzygium*, although the fruit is more elongated than usual. It is probably a congener of Blume's three Javan species referred to *Caryophyllus* in DeCandolle's Prodromus, although the flower-buds are insipid and inodorous: but it cannot be generically separated from the preceding species and its near allies.

PLATE 64.—EUGENIA (SYZYGIUM) CORYNOCARPA: branches in flower and in fruit, of the natural size. Fig. 1. Vertical section of a flower-bud. 2. A flower, with the corolla separating as a lid. 3. Transverse section of the ovary. 4. A fruit. 5. Vertical section of the same, showing the seed, &c. 6. Transverse section of a fruit and seed. 7. Embryo. 8. The same, with the cotyledons separated.—The details magnified.

†† *Flores majores; limbo calycis magis quadrilobo, lobis æstivatione imbricatis demum sæpius deciduis.* (Transitus ad *Microjambosam*, Blume.)

28. EUGENIA (SYZYGIUM) CLUSIÆFOLIA, Sp. Nov. (Tab. 65.)

E. foliis obovatis seu ovalibus basi cuneatis apice rotundatis nunc retusis chartaceis creberrime penninerviis reticulatis supra lucidis; cymis terminalibus decompositis paniculato-corymbosis multifloris; pedunculis teretibus; alabastris obovoideo-turbinatis carnosis; calycis margine tenui repando-quadrilobo.

HAB. Samoan Islands, Tutuila and Savaii: on rocks near the sea.

Apparently a tree of considerable size, glabrous throughout, with terete branchlets. *Leaves obovate* or inclining to *oval, with a cuneate base, rounded and often retuse at the apex*, sometimes rather apiculate, 4 or 5 inches long, 2½ to 3 broad, *chartaceous* or somewhat coriaceous, green both sides, dull beneath, *lucid above*, pellucid-punctate, conspicuously *feather-veined with very close* and slender somewhat transverse *veins*, which run almost straight to near the margin, where they unite with a slender intramarginal vein; the veinlets *reticulated*. Petiole 4 or 5 lines long. *Cymes* apparently collected in an ample *compound corymbose panicle*, of 8 or 10 inches in length; the *peduncles* and their ramifications *terete*, spreading, rather stout: pedicels very short. *Flowers very numerous; the buds obovoid-turbinate*, thick, 4 lines long, including the pedicelliform base. *Calyx very fleshy*, produced beyond the ovary; the truncate thin *margin repandly somewhat four-lobed;* the lobes short and broad, doubtless deciduous. Corolla rather large, falling off as a lid in anthesis. Stamens very numerous, 5 or 6 lines long. Ovary two-celled; the cells several-ovuled. Fruit not seen.

This is certainly a *Syzygium*, and a well-marked and peculiar species, with its lineately-veined leaves not unlike those of a *Clusia* in appearance. A sterile shoot perhaps of this species was gathered at Tongatabu.

PLATE 65.—EUGENIA (SYZYGIUM) CLUSIÆFOLIA: a branch, in flower, of the natural size. Fig. 1. A flower-bud, with the corolla becoming detached. 2. Vertical section of a flower. 3. Transverse section of the ovary.—The details magnified.

29. EUGENIA (SYZYGIUM?) TUTUILENSIS, Sp. Nov.

E. foliis oblongis seu ellipticis utrinque subobtusis chartaceis crebre penninerviis, venis intra marginem in venam falsam nunc duplicem confluentibus; cyma terminali pluriflora foliis breviore; alabastris (parvulis) haud pedicellatis obovatis; calycis limbo breviter quadrilobo.

HAB. Tutuila, one of the Navigators' or Samoan Islands.

There is only a miserable specimen in the collection, with unexpanded flowers. Branches terete. *Leaves* 5 to 7 inches long, 2 or 3 inches wide, *chartaceous* in texture, glabrous, as is the whole plant, somewhat lucid, *oblong or elliptical, obtuse at both ends*, or abruptly somewhat contracted at the apex into a very obtuse and short acumination, *closely feather-veined; the veins* straight, sparingly reticulated, *connected within the margin by a false vein*, and often with another less distinct one close to the margin. Petioles 4 or 5 lines long. *Cyme* terminal, small, rather simple, raised on a peduncle nearly an inch long, much shorter than the leaves. *Flowers sessile* in threes or fives at the extremity of the divergent partial peduncles. *Flower-buds obovate*, with an acute base, only 3 lines long; the limb of the *calyx rather distinctly four-lobed*; the lobes short and broad, imbricated in æstivation. The corolla apparently falls off without expanding. The flowers are small, but the foliage appears like that of a *Jambosa*.

30. EUGENIA (SYZYGIUM?) SAVAIENSIS, Sp. Nov.

E. foliis membranaceis oblongis basi acutis apice acuminatis laxe penninerviis, venis intra marginem arcuato-anastomosantibus; cymis corymbosis multifloris; pedunculis partialibus subangulatis, ultimis brevissimis incrassatis; alabastris obovato-clavatis (semipollicaribus); calycis margine repando-quadrilobo.

HAB. Savaii, one of the Samoan or Navigators' Islands.

Probably a tree of considerable size; glabrous throughout. *Leaves membranaceous*, green both sides, dull, 7 to 9 inches long and 3 or 4 wide in the middle, oblong-lanceolate or *oblong*, conspicuously and *acutely acuminate, the base acute* or somewhat acuminate, loosely feather-veined; the veins oblique, somewhat branched, *arcuate and anastomosed some distance within the margin*, but not forming a distinct intramarginal vein. Petiole an inch or more in length, slender. *Cyme corymbose, many-flowered, peduncled*, shorter than the leaves, its *thickish branches somewhat two-edged; the ultimate divisions very short*, bearing about 3 subsessile flowers. *Flower-buds obovate-clavate*, fully *half an inch long*, including the acute base, above 3 lines in diameter. *Calyx* produced considerably beyond the ovary; the *margin repandly four-lobed;* the lobes very short and broad, probably deciduous from the fruit. Petals forming a convex lid in the bud, readily detached from the base, and probably falling away together in anthesis; but they are only slightly coherent. Stamens very numerous, two-thirds of an inch long. Fruit not seen.

The specimen of this ambiguous plant is a very imperfect one. Perhaps the petals expand in anthesis. This and the foregoing species have the habit of *Jambosa*, and should perhaps be referred to *Microjambosa;* but the lobes of the calyx are not more manifest than in many *Syzygia*.

31. Eugenia (Syzygium?) brevifolia, Sp. Nov.

E. foliis parvis ovato-oblongis obtusis basi rotundatis subsessilibus subcoriaceis punctatis subtus leviter penninerviis; cymis terminalibus parvis; pedunculis ramulisque tetragonis; bacca (magna) ovoidea.

Hab. On the mountains of Tutuila, one of the Samoan Islands, at the elevation of 2,500 feet.

There is only a single, fruiting branch of this plant in the collection; apparently from a shrub. Branches very leafy, glabrous, as is the whole specimen; the slender *branchlets*, as well as the short and *few cymose peduncles, quadrangular*, the angles acute. *Leaves small*, an inch or less in length, *ovate-oblong, obtuse*, or slightly and obtusely pointed, *rounded at the base, subsessile* (the petioles only half a line long), *coriaceous* in texture, dull, pellucid-*punctate* by transmitted light, *lightly feather-veined beneath*. Flowers not seen. Mature *fruit ovoid, baccate, large* for the foliage, half an inch long and almost of that diameter near the base, narrowed at the summit, which is deeply umbilicate; the calyx-teeth probably short, but deciduous: within one-celled, two-seeded. Cotyledons orbiculate, fleshy, peltate.

There are in the collection undeterminable sterile branches of several *Myrtaceæ*, probably species of *Eugenia*, from the Samoan, Friendly, Feejee, and Mangsi Islands, and from Luzon.

3. MYRCIA, *DC.*

1. Myrcia exsucca, *Mart.*

Myrcia exsucca, Mart. in DC. Prodr. 3, p. 247; St. Hil. Fl. Bras. 2, p. 316.

Hab. Organ Mountains, Brazil. (Foliage only.)

2. Myrcia pubescens, *Mart. l. c.*

Hab. Brazil, in the neighbourhood of Rio Janeiro.

3. Myrcia elliptica, *Gardn.*

Myrcia elliptica, Gardn. in Hook. Lond. Jour. Bot. 2, p. 352.

Hab. Brazil, in the Organ Mountains, near Rio Janeiro.

4. Myrcia sphærocarpa, *DC. l. c.*

Hab. Rio Janeiro, Brazil: also from the Organ Mountains, apparently a variety with broader and very obtuse leaves.

5. Myrcia ferruginea, *DC. l. c.*

Hab. Organ Mountains, and in the vicinity of Rio Janeiro, Brazil.

6. Myrcia prunifolia, *DC. l. c.*

Hab. Organ Mountains, Brazil. (In fruit.)

7. Myrcia ellipticifolia, *Camb.*

Myrcia ellipticifolia, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 312.

Hab. Organ Mountains, Brazil.

8. Myrcia Pseudo-Mini, *DC. l. c.*

Hab. Organ Mountains, or near Rio Janeiro, Brazil.

9. Myrcia ramulosa, *DC. l. c.*

Hab. Near Rio Janeiro. (In flower only.)

10. Myrcia Eriopus, *Mart.*

Myrcia Eriopus, Mart. in DC. Prodr. 3, p. 255.

Hab. Organ Mountains, near Rio Janeiro, Brazil. (In fruit.)

11. Myrcia spectabilis, *DC.*

Myrcia spectabilis, DC. Prodr. 3, p. 248; Cambess. in St. Hil. Fl. Bras. 2, p. 299.

Hab. Organ Mountains, Brazil. (With undeveloped flowers only.)

12. Myrcia Browniana, *Gardn.*

Myrcia Browniana, Gardn. in Hook. Lond. Jour. Bot. 2, p. 354.

Hab. Organ Mountains, Brazil: in forests.

Gardner collected this striking species in flower only. Our specimens have only the full-grown fruit. This is globose, nearly two-thirds of an inch in diameter, containing two proportionally large seeds, with a thin and chestnut-coloured testa: the embryo as in the genus.

13. Myrcia subsericea, Sp. Nov.

M. foliis breviter petiolatis oblongo-lanceolatis sensim acutissime acuminatis transverse lineato-multinervatis supra glabris subtus ramulisque pube appressissima argenteo-sericeis nitentibus; pedunculis petiolum superantibus paucifloris; floribus sessilibus bracteatis; calyce bracteisque argenteo-sericeis.

Hab. Rio Janeiro, Brazil. (Foliage, with peduncles, from which the flowers have fallen.) Also gathered by Macrae, with unexpanded flower-buds, and by Pohl (No. 1047).

This plant apparently has been gathered by several collectors, but I do not find it anywhere described. It is remarkable for the fine *satin-like and silvery sheen of the lower face of its leaves*, as in some *Malpighiaceæ*. These are 6 or 7 inches long by 1½ to 2 in width, on petioles of 3 lines in length, *oblong-lanceolate*, acute at the base, and *tapering gradually into a slender and very acute point* at the apex, chartaceous, pellucid-punctate, transversely and closely nervosely veined (like a *Chrysophyllum*); the veins confluent into a marginal vein. Both sides are silvery-silky in the nascent foliage; but the *upper face* is soon *glabrous* and bright green. Peduncles axillary, half an inch to an inch long, bearing *several sessile flowers* apparently in a small condensed cyme, the *silky* buds subtended by silky oblong-lanceolate bracts. Expanded flowers not seen. The obovoid calyx however has a five-cleft limb, the lobes imbricated in æstivation; the throat silky inside. Ovary two-celled, with 2 ovules in each cell.

14. MYRCIA ROSTRATA, *DC.?*

Myrcia rostrata, DC. Prodr. 3, p. 255? Cambess. in St. Hil. Fl. Bras. 2, p. 320.

HAB. Organ Mountains, Brazil.

15. MYRCIA SEPIARIA, *DC.? l.* c.

HAB. Organ Mountains, Brazil.

There are specimens of two or three more species, probably of this genus, but not in a state for determination.

4. MARLIEREA, *St. Hil.*

1. MARLIEREA SUAVEOLENS, *St. Hil.*

Marlierea suaveolens, St. Hil. Fl. Bras. Mer. 2, p. 374, t. 156.

HAB. Organ Mountains, Brazil.

The specimens, with unexpanded flower-buds, exactly accord with the description and figure above-cited, only the leaves are mostly larger.

2. Marlierea excorticata, *Mart.*

Marlierea excorticata, Mart. Herb. Bras. no. 59, & in Flora, 20, Beibl. p. 88.

Hab. Organ Mountains, Brazil.

This, which is also Pohl's No. 1083, has the branchlets glabrous (not ferrugineous), and the leaves are mostly broader, and obtuser (or rounded, instead of tapering) at the base, than in the plant of Martius, of which it appears to be only a marked variety. The peduncle and the branches of the trichotomous cyme are compressed. The flower-buds are unexpanded.

5. LUMA, Nov. Gen.

Calyx tubo turbinato vel subgloboso; limbo quadripartito (rarissime quinquepartito), lobis æstivatione imbricatis. Petala, stamina, etc. Eumyrti. *Ovarium triloculare, raro biloculare; placentis in loculorum angulo centrali pluriovulatis. Bacca subglobosa, calycis limbo coronata, bi–trilocularis (dissepimentis quandoque evanidis), oligo–pleiosperma. Semina reniformi-rotundata seu lenticularia; testa membranacea a nucleo libera. Embryo cyclico-curvatus: cotyledones sat magnæ, ovales vel orbiculatæ, radicula prælonga semicinctæ vel fere circumdatæ, aut planæ subcarnosæ radiculæ accumbentes, aut foliaceæ varioque modo contortuplicatæ.—Frutices vel arbores Chilenses, fragrantes; foliis coriaceis; pedunculis axillaribus uni–plurifloris; petalis albis.*

The species here associated have been variously referred, some of them to *Eugenia*, others to *Myrtus:* but they evidently belong to neither, as the full details of Plate 66, elaborated with extreme care and ability by Mr. Sprague, will abundantly show. From *Myrtus*, with which they accord in the long and curved radicle, they are distinguished by the ample cotyledons, and the membranaceous testa of the seed (unless, indeed, *Luma Temu* and its immediate allies should prove to have a hard seed-coat): from *Eugenia* they are still more widely distinguished by the number of the seeds (from 3 to 10 usually maturing), by the elongated radicle coiled partly or nearly round the broad and thin cotyledons; which, although rather fleshy when plane, and strikingly folded and crumpled together in certain species, are not at all united. The cotyledons when contortuplicate much resemble those of *Myrcia;* but the ovules are indefinitely numerous in each cell. For the genus, thus defined, I have adopted one of the native names of a Myrtaceous tree (*Myrtus Luma* of Molina), which in all probability belongs to this group, and which has the merit of being both short and euphonious.*

1. LUMA CHEKEN. (Tab. 66.)

L. foliis ovatis ovali-rotundis seu ovato-oblongis apiculato-acuminatis subcoriaceis concoloribus subtus penninerviis glabris vel glabratis, novellis margine costaque subtus cum ramulis pubescentibus; pedunculis folium æquantibus vel superantibus uni–tri-(nunc quinque-)floris, flore intermedio subsessili; bracteolis minutis caducissimis; calycis lobis rotundatis petalisque 4; *cotyledonibus planis.*

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* Besides the species comprised in the present collection, or mentioned in the text, the following, which I possess in flower only, probably belong to the genus:—

Eugenia planipes, Hook. & Arn. Bot. Misc. 3, p. 323, from Chilöe and Valdivia; which is allied to *L. Temu.*

Myrtus multiflora, Juss., DC. Prodr. 3, p. 240; or, at least a plant from Gay's Chilian collection wrongly named "*Eugenia multiflora*, Hook.," which accords with DeCandolle's character, and is pentamerous! If it belong here it is the only pentamerous species known to me.

Eugenia leptospermoides, DC. Prodr. 3, p. 266; or, at least Gay's plant referred by Barneoud to that species; which should have been compared with the originals, at hand in two Parisian herbaria, instead of being guessed at.

Eugenia Gayana, Barneoud, in Gay, Fl. Chil. 2, p. 390, a handsome, small-leaved species.

Also, *Eugenia Bridgesii*, Hook. & Arn. Bot. Misc. 3, p. 322, which I do not possess, evidently belongs to the *Temu* group.

Eugenia Cumingii, *E. ovata*, and *E. Selkirkii*, and *Myrtus? Fernandeziana*, Hook. & Arn. l. c. are unknown to me; as also are *Myrtus Coquimbensis*, and *Eugenia maritima* of Barneoud, in Gay's Flora Chilena.

Myrtus folio subrotundo vulgò *Cheken*, Feuill. Obs. 3, p. 45, t. 32.
M. Cheken, Spreng. Syst. 2, p. 85, excl. syn. ("*Eugenia Cheken*, Molina," non est.)
Eugenia Chekan & *E.? apiculata*, DC. Prodr. 3, p. 276, 278.
Myrtus Luma, Molina, Stor. Nat. Chil. p. 173, 352? haud Gay.

Var. α. *foliis ovalibus oblongisve utrinque acutis; pedunculis plerisque unifloris.*

Eugenia Cheken, Hook. & Arn. Bot. Beech. Voy. p. 56, & Bot. Misc. 3, p. 320; Gay, Fl. Chil. 2, p. 290.
Myrtus Luma, Schauer, in Rel. Meyen. p. 332;—itaque
M. Molinæ, Gay, Fl. Chil. 2, p. 381.

Var. β. *foliis late ovatis rotundisve basi aut acutis aut obtusis vel rotundatis apice subito cuspidatis; radicula (an semper?) cotyledonibus vix longiore.*

Myrtus Luma, Spreng. Syst. Veg. 2, p. 484?
Eugenia apiculata, Hook. & Arn. in Bot. Misc. 3, p. 321; Gay, Fl. Chil. l. c.

(Var. γ. *foliis obovato-oblongis plerumque cuspidato-acuminatis.*

Eugenia affinis, Gillies, in Hook. & Arn. Bot. Misc. 3, p. 321.
E. apiculata, var. Hook. f. adn. in Fl. Antarc. p. 277.)

(Var. δ. *foliis ovalibus vix cuspidatis ramulisque glaberrimis.*

Eugenia Gilliesii, Hook. & Arn. in Bot. Misc. 3, p. 320.)

HAB. Chili, near Valparaiso (var. α.); and on a mountain 12 miles in the interior, var. β.

A shrub or small tree; the *branchlets* more or less *pubescent*, often with rusty hairs. *Leaves* varying from *ovate and roundish-oval to ovate-oblong*, sometimes rather obovate, short-petioled, in different forms either *acute at both ends* or rounded at the base, the apex sometimes rounded, but commonly tipped with a sharp *cuspidate-acuminate* point: they are green both sides, *smooth, or glabrate*, or with a few hairs, especially on the midrib underneath and on the margins when young, in texture only *slightly coriaceous*, occasionally thicker, opaque, but somewhat lucid, the midrib salient, the *pinnate veins rather* *manifest underneath*, and confluent into an intramarginal vein: they vary from 5 or 6 to 15 lines in length, and from 3 or 4 to 12 in width. *Peduncles equalling or often exceeding the leaves* when *one-flowered*, usually more elongated when *three-*(rarely five-)*flowered;* in the latter case the main peduncle, an inch or so in length and slender, is flattened (as in the other several-flowered species); the *intermediate flower sessile* or nearly so; the others on pedicels of 3 to 7 lines in length. *Bractlets* under the flower *minute and very caducous.* Flowers nearly as large as those of the Common Myrtle. *Calyx* almost glabrous; the tube obovoid-turbinate; the *lobes* 4, *rounded*, imbricated in æstivation, mostly a little ciliolate, as are the four rounded-obovate, deciduous petals. Stamens very numerous: filaments filiform: anthers oval. Style filiform: stigma simple. Ovary usually three-celled, sometimes two-celled, with the placentæ in the axis. Ovules numerous in two ranks in each cell, hemitropous, slightly reniform. Berry globose, pulpy, 5 or 6 lines in diameter, apparently purple, crowned with the persistent lobes of the calyx, ripening from 3 or 4 to 9 or even 12 seeds. Seeds 1½ to 2 lines in diameter, compressed, orbiculate, often excised at the hilum; the testa membranaceous, chestnut-coloured, smooth, not adnate to the embryo. Radicle very long, cylindrical or somewhat club-shaped, incurved. *Cotyledons* broadly oval, accumbent to the semiannular radicle, fleshy but rather thin and flat, *plane* or sometimes slightly curved laterally, not cohering with each other or at all conferruminate, shorter than the radicle. In all the seeds examined of var. β. the *radicle* is *truncate*, as if the extremity were cut off nearly in a line with the summit of the cotyledons, instead of continuing so as to half surround them or more. Taken with the difference in foliage, this would indicate the *Eugenia apiculata*, Hook. & Arn. as a distinct species; but I suspect that the peculiarity is a casual one.

The plants here brought together pretty clearly belong (with the possible exception indicated above) to one somewhat variable species, which is doubtless the *Myrtus Cheken* of Feuillée, who first made the plant known. Probably it likewise includes the *Myrtus Luma* of Molina, to which Dr. Hooker's *Eugenia apiculata* var. *Arnyan* [*Arrayan?*] would very well correspond, having broadly oval leaves and one-flowered peduncles. The only question is as to its size, and the nature of the wood: the *Luma* according to Molina being a tree frequently of forty feet in height, and its wood much valued for the use of the coach-makers. Gay, indeed, asserts that the true *Luma* (his *Myrtus Luma*) is a shrub, with ovate-lanceolate leaves, a native of the south of Chili; but to this, with reason, he cites the synonyme of Molina with a mark of doubt. I have not seen his specimens of the plant in question. Schauer's *Myrtus Luma*, cited above, is from the vicinity of Valparaiso, and must needs belong to our first variety, although with unusually small leaves. Sprengel's *M. Luma* answers to our var. *β*.

PLATE 66, *A*.—LUMA CHEKEN, var. *α*.: branches, in flower and in fruit, of the natural size. Fig. 1. An unexpanded flower. 2. The same, expanded. 3. A stamen. 4. Vertical section of the ovary, &c. 5. Transverse section of a three-celled ovary. 6. Similar section of a two-celled ovary. 7. A fruit. 8. Vertical section of the same, showing some of the seeds. 9. A seed. 10. Vertical section of the same and the contained embryo. 11. Transverse section of the same. 12. The embryo detached.—The details variously magnified.—*B*. A branch of var. *β*., in fruit, of the natural size. Fig. 13. A seed, magnified. 14. Embryo, from the same, magnified.

2. LUMA TEMU.

L. foliis ovalibus ellipticisve nunc obovatis obtusissimis coriaceis glabris subtus pallidis obsolete penninerviis, novellis ramulisque ferrugineo-puberulis; pedunculis (solitariis ternis quaternisve) folia æquantibus apice umbellatim 3–7-floris, flore intermedio sessili, cæteris pedicellatis, pedicellis duobus majoribus sæpe trifloris; bracteolis subulatis persistentibus; calycis lobis rotundatis demum reflexis petalisque 4.

Eugenia Temu, Hook. & Arn. Bot. Beech. Voy. p. 56, & in Hook. Bot. Misc. 3, p. 322. *E. multiflora*, Hook. & Arn. in Bot. Misc. l. c., ex char. (var. *foliis apice subattenuatis*); Gay, l. c.?

HAB. Chili, near Valparaiso, &c.; common.

Of this pretty well-marked species, as of the following, I have seen no matured fruit: but the seeds and embryo will most likely be found to accord with the present genus. The *leaves* are *oval or elliptical*, sometimes inclining to *obovate* or rotund, usually *very obtuse*, short-petioled, *coriaceous* in texture, dull and very opaque, an inch to an inch and a half in length, 8 to 12 lines wide, *whitish and obscurely feather-veined beneath*, *glabrous* or glabrate at maturity, the *young ones, like the branchlets, ferrugineous-pubescent*, the pubescence fine and close. *Peduncles solitary* or *even* 3 *or* 4 from the same axil, slender, flattish, *as long as the leaves*, or sometimes longer, only the depauperate ones one-flowered, commonly 3–7-*flowered in a kind of umbel, the central flower sessile, the others on pedicels* of 2 to 4 lines long, *or the stronger pair again trifid* at the apex, forming a 7–9-flowered cyme. *Bractlets* at the forking and at the base of each flower *subulate, persistent*. Flowers apparently smaller than in the foregoing species, but of the same structure. Tube of the calyx turbinate, ferrugineous, puberulent; the *lobes rounded*, *reflexed* after anthesis. Ovary three-celled; the cells containing numerous ovules.

3. Luma Cruckshanksii.

Eugenia Cruckshanksii, Hook. & Arn. in Bot. Misc. 3, p. 321.

Hab. Chili, near Valparaiso.

Of this species we have in the collection only a fragment, destitute both of good flowers and of fruit. It appears to be nearly allied to the preceding species. The seeds, which are said to have a *crustaceous* testa, and the cotyledons, said to be conferruminate, should be re-examined.

4. Luma stenophylla.

Eugenia stenophylla, Hook. & Arn. Bot. Misc. 3, p. 322; Gay, Fl. Chil 2, p. 395.
Myrtus Gudilla, Colla, in Mem. Acad. Turin. 37, p. 66, t. 15.

Hab. Chili; along the banks of the river near Valparaiso.

This species, with the allied *L.* (*Eugenia*, Hook. & Arn.) *planipes*, belongs to the same group as *L. Temu*. I have not seen the fruit, which is said by Gay to be a three-celled and few-seeded berry. The peduncles, occasionally geminate, are either one-flowered, or two-flowered (the intermediate flower wanting), or more commonly three-flowered, as described. Sometimes the inflorescence becomes terminal and somewhat racemose on the branches, by the reduction of the upper leaves to bracts. The conspicuous linear-subulate bractlets are persistent. The leaves occasionally become alternate.—The name imposed by Colla is of the same date as that of Hooker and Arnott.

5. Luma obtusa. (Tab. 66.)

L. foliis ovato-ellipticis vel subrotundis utrinque obtusis coriaceis planis punctatis glabris subtus pallidis uninerviis aveniis, petiolis ramulisque junioribus rufo-pubentibus; pedunculis solitariis unifloris folium æquantibus; bracteolis persistentibus oblongis foliaceis lobos 4 calycis oblongo-ovales patentes adæquantibus; cotyledonibus contortuplicatis.

Eugenia obtusa, DC. Prodr. 3, p. 266?
Myrtus Raran, Colla, in Mem. Acad. Turin. 37, p. 66, ex char.

Hab. Chili; on hills or in ravines, near Valparaiso.

A low shrub, apparently only a foot or two in height; the branches very leafy; the *younger branchlets ferrugineous* with a close and fine pubescence, of which the distinct petioles (scarcely a line long), peduncle and calyx-tube partake, but even the nascent foliage shows only slight traces of it. The *leaves*, however, are somewhat ferruginous in hue underneath when young: they are thick and *coriaceous*, *flat* (the margins not revolute), *glabrous and punctate* both sides, green above, *pale beneath*, where they are *one-nerved* with a rather conspicuous midrib, but wholly *veinless*; in shape they are *ovate-elliptical*, varying to *roundish* or to oblong, very *obtuse* at both ends, from 3 to 7 lines long, and from 2 to 4 lines broad. *Peduncles solitary*, axillary, *one-flowered*, *about the length of the leaf*, at the apex furnished with two persistent *bractlets*, which are larger in proportion than in other species, linear-spatulate or *oblong*, *foliaceous*, equalling the flower, or at least the 4 *spreading*, *oblong-oval lobes of the calyx*. Flowers, only seen after the fall of the petals and stamens, apparently twice or thrice the size of those of *L. ferruginea*. Ovary many-ovuled. Berry globular, about 3 lines in diameter, crowned with the conspicuous calyx-lobes, three-celled; the cells usually ripening 4 or 5 pretty large and turgid-lenticular seeds. Testa thin and membranaceous. Radicle long, semiannular. *Cotyledons* large, orbicular, nearly foliaceous (as in *Myrcia*), strongly and apparently variously *contortuplicate*, in a manner best shown by the illustrations given on plate 66.

This species seems not to have been noticed by Hooker and Arnott; but it is without much doubt the *Myrtus Raran* of Colla, described from Bertero's specimens. Moreover, it accords so well with the character of DeCandolle's *Eugenia obtusa*, that, knowing there is no little confusion between the Peruvian and Chilian specimens of Dombey's collection, I venture to adopt this specific name, rather than the aboriginal appellation. It belongs to the group that comprises the two following species, both of which probably have thin and contortuplicate cotyledons.

Plate 66, *D.*—Luma obtusa: a fruiting branchlet, of the natural size. Fig. 15. A seed, magnified. 16. Vertical section of the same, showing the contortuplication of the embryo. 17. A less mature embryo detached, magnified.

6. Luma ferruginea.

Eugenia ferruginea, Hook. & Arn. in Bot. Misc. 3, p. 319.
Myrtus rufa, Colla, in Mem. Acad. Turin. 37, p. 66.

Hab. Chili; in ravines, near Valparaiso.

A very small-leaved and small-flowered species, well characterized by both authors cited above; who notice that even the midrib of the leaves is not apparent. The fruit in all our specimens has been a nidus for insects; so that I have not seen the seeds.

7. Luma correæfolia. (Tab. 66.)

Eugenia correæfolia, Hook. & Arn. in Bot. Misc. 3, p. 319.

Hab. Chili; on a mountain ridge, about twelve miles south of Valparaiso.

The flowering plant is well described by Hooker and Arnott. The flowers are larger than in any of the foregoing species. The persistent bractlets are sometimes connate with the base of the calyx. The berry is obovoid, 5 or 6 lines long, ripening 3 or more seeds. Cotyledons strongly complicate and contortuplicate, thin and foliaceous. Radicle truncate at the end (as in *L. Cheken* β.), very long, nearly encircling the cotyledons. The character of the embryo is best shown by the analyses given on plate 66.

Plate 66, *B.*—Luma correæfolia. Fig. 18. Vertical section of a fruit (the parts of the flower persistent) and of two contained seeds. 19. Embryo, detached. 20. Transverse section of the same, cutting twice through the radicle.—Magnified.

6. MYRTUS, *Tourn.*

§ 1. EUMYRTUS.—*Filamenta indefinita filiformia: antheræ didymæ medio affixæ. Ovarium bi–triloculare, placentis ex angulo interno loculorum projectis.*

1. Myrtus communis, *Linn.*

Hab. Madeira. A narrow-leaved form: nearly the variety *Lusitanica.*

2. Myrtus bullata, *Banks & Soland.*

Myrtus bullata, Banks & Solander, Ic. & Ms.; A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 115; Hook. Ic. Pl. t. 557; Hook. f. Fl. N. Zeal. p. 70.

Hab. Bay of Islands, New Zealand. (In fruit.)

I do not possess the flowers. The fruit and seeds, which are those of a true *Myrtus*, are well represented by Hooker, in the plate above cited.

§ 2. LEANTRIA. (*Leantria*, Soland. ex Forst.)—*Filamenta subdefinita vel pauciuscula: antheræ didymæ basi vel medio affixæ. Ovarium imperfecte bi–triloculare, placentis inter se liberis.—Frutices vel suffrutices, foliis* Vaccinii *seu* Oxycocci.

3. Myrtus pedunculata, *Hook. f.*

Myrtus pedunculata, Hook. f. in Hook. Ic. Pl. t. 629, & Fl. N. Zeal. p. 71.

Hab. New Zealand.

There are in the collection some sterile leafy stems, perhaps belonging to a state of this species; of which I possess no specimens.

4. Myrtus Nummularia, *Poir.*

Myrtus Nummularia, Poir. Dict. 4, p. 407; Gaud. in Ann. Sci. Nat. 5, p. 106, t. 2; DC. Prodr. 3, p. 238; Hook. f. Fl. Antarc. p. 276.

Hab. Orange Harbour, Fuegia. Very common; creeping over the ground like a Craneberry.

The ovary I find to be incompletely three-celled, in the manner of the Quitensian *M. phylicoides* and *M. oxycoccoides* of Bentham (and probably the other allied Andine species): at least the dissepiments, if they meet, do not cohere in the axis of the cell, except at the top and bottom. The numerous seeds are less curved than in true *Myrtus*; but the embryo is the same.

To a third section of the genus[*] belongs *Myrtus Ugni* of Molina,

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[*] § 3. UGNI. (*Ugni*, Turcz. in Flora, 31, p. 711, excl. char. seminum!)—*Filamenta brevia, nunc complanata, indefinita, exteriora majora: antheræ oblongæ, apiculatæ, introrsum adnatæ. Ovarium perfecte bi–triloculare; loculis septo spurio e dorso carpellorum orto pl. m. bilocellatis. Embryo* Myrti!

Myrtus Ugni, Molina, DC. etc. *Eugeni Ugni*, Hook. & Arn. Bot. Misc. 3, p. 318, where, through some mistake, the flowers are said to be quadrifid, and the peduncles shorter than the leaf. To this clearly belongs the plate as well as the description of which has short and flattened filaments, bearing aduate anthers, a completely bi–trilocular ovary, and with the cells becoming more or less perfectly bilocellate by the growth of a false partition from the back of each cell to meet the prominent placentæ, much as in *Rhodomyrtus* (the character of which is somewhat weakened by this);—in fact differing from *Eumyrtus* just as true *Vaccinium* and the section *Vitis-Idæa* differ from the section *Cyanococcus*, Gray, Chlor. Bor.-Am. p. 53. Turczaninow (loc. supra cit.), remarking these characters (except that he does not notice the dorsal septum that meets each projecting placenta), has founded on the flowers of this plant his genus *Ugni*. But his character of the embryo must have been derived from some other plant, or else it is incorrect: for the seed and hippocrepical embryo in my specimens of *Myrtus Ugni*, from C. Gay's Chilian collection, are just as in *Myrtus nummularia*, &c.; the testa is almost bony and reniform, the radicle is long and slender, and the cotyledons are short, narrow, and semicylindrical, not at all conferruminate. Turczaninow may have had the seed of some species of *Luma* (vide p. 535): yet in these the radicle is not short, but remarkably long, nor are the cotyledons truly conferruminate, nor the testa hard and crustaceous, in any species that I have examined.

‡ *Species dubia.*

5. Myrtus? tenuifolia, *Smith.*

Myrtus tenuifolia, Smith, in Trans. Linn. Soc. 3, p. 280; DC. Prodr. 3, p. 241.

Hab. Near Sydney, New South Wales.

This has scarcely been noticed, so far as I am aware, since the time

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Feuillée, the figure being doubtless reduced in size. For the leaves are represented of barely 3 lines in length, while in the description they are said to resemble those of the Myrtle of Tarentum, and to be 7 or 8 lines long. A true congener, undoubtedly, is the

Myrtus Candollii, Barneoud, in Gay, Fl. Chil. 2, p. 382, from the province of Chilöe; which I possess with undeveloped flowers only. It is pentamerous, and has the same short, oblong or sagittate and apiculate anthers, and short filaments as *M. Ugni*, the filaments not exceeding the anthers in length in the full-grown flower-buds; but they are not dilated nor flattened. It therefore further invalidates the character on which Turczaninow most relies to distinguish his genus *Ugni.*

of Smith, who has well described the foliage, &c. Our specimen bore only one or two small fruits, not larger than a pepper-corn, containing 2 or 3 roundish-reniform, not strongly incurved seeds; the embryo as in *Myrtus* or *Rhodomyrtus*. Perhaps it might be referred to the latter genus, although the leaves are strictly one-nerved; but, as well as I can ascertain, the ovary appears to have been completely two-celled, and without any evident dorsal partitions.

7. RHODOMYRTUS, *DC.*

MYRTUS sect. RHODOMYRTUS, DC. Prodr. 3, p. 241.
RHODOMYRTUS, Benth. in Hook. Lond. Jour. Bot. 2, p. 220; Wight, Spicil. Nielgh. 1, p. 59, t. 71; Blume, Mus. Bot. Lugd.-Bat. p. 76.

1. RHODOMYRTUS TOMENTOSA, *Wight, l. c.*

Myrtus tomentosa, Ait.; Sims, Bot. Mag. t. 250; Wight, Ic. Pl. Ind. Or. t. 522, & Ill. Ind. Bot. 2, t. 97.

HAB. Singapore.

The true internal structure of the ovary was first indicated by Mr. Bentham, in the London Journal of Botany, above-cited. Perhaps the genus may be again reduced to a section of *Myrtus*, of which it has the embryo.

8. RHODAMNIA, *Jack.*

RHODAMNIA, Jack, in Malay. Misc. & Hook. Comp. Bot. Mag. 1, p. 153; Blume, Mus. Bot. Lugd.-Bat. p. 78.
MONOXORA, Wight, Ill. Ind. Bot. 2, t. 122, & Ic. Pl. Ind. Or. 2. t. 524.

1. RHODAMNIA CINEREA, *Jack. l. c.*

Monoxora spectabilis, Wight, l. c.; Benth. in Hook. Lond. Jour. Bot. 2, p. 219, non *Rhodam. spectab.*, Blume?
Myrtus smilacifolia, Wall. Cat. no. 3629.

Hab. Singapore: several forms, including the varieties *concolor* and *laxiflora* of Blume.

2. Rhodamnia trinervia, *Blume, l. c.*

Myrtus trinervia, Smith, in Trans. Linn. Soc. 3, p. 280.
Eugenia? trinervia, DC. Prodr. 3, p. 279.
Monoxora rubescens, Benth. in Hook. Lond. Jour. Bot. 2, p. 219.

Hab. Sydney, New South Wales: with a smoother and smaller-leaved variety.

9. NELITRIS, *Gærtn.*

1. Nelitris fruticosa. (Tab. 60.)

N. foliis ovatis seu ovato-lanceolatis acuminatis; pedunculis axillaribus unifloris folio multum brevioribus; limbo calycis quinquedentato; fructu decaspermo.

Decaspermum fruticosum, Forst. Char. Gen. p. 74, t. 37. (Descr. in Guill. Zeph. Tait. p. 58.)
Psidium Decaspermum, Linn. f. Suppl. p. 252; Forst. Prodr. Fl. Ins. Austr. p. 39.
Nelitris Jambosella, DC. Prodr. 3, p. 231, quoad pl. Forst., non Gærtn.
Jossinia, aff. *J. cassinoidi*, Guill. Zeph. Tait. l. c.?

Hab. Tonga Islands: the specimens without flowers or fruit. Feejee Islands: with fruit. Not in the collection from Tahiti (where alone it was gathered by Forster), but perhaps noticed there by Dr. Pickering, as, "*Myrtus?* A shrub in mountain forests; rare: the fruit red, about the size of a cherry."

No flowers of this plant were collected. The foliage so closely resembles that of the following species as to suggest that the difference in inflorescence might be merely sexual, were it not that there are fertile specimens of the latter with cymose-paniculate flowers. Nor can it be the *N. Jambosella*, Gærtn., of Ceylon, which has long and slender peduncles, equalling the leaves; while in our plant they do not exceed the petiole, and are only 3 or 4 lines in length, as they are described by Forster; with whose detailed description (published by Guillemin) the scanty specimens well accord.

The structure of the ovary in *Nelitris* is explained by Bentham (in Lond. Jour. Bot. 2, p. 220), but it appears not to have been rightly understood by Blume, who, in Mus. Bot. Lugd.-Bat. p. 72, has given a detailed generic character, and described ten species of the Indian Archipelago.

PLATE 60, *D*.—NELITRIS FRUTICOSA. Fig. 1. Unripe fruit, with its peduncle and a pair of leaves, of the natural size. 2. Transverse section of the fruit, magnified.

2. NELITRIS VITIENSIS, Sp. Nov. (Tab. 60.)

N. foliis ovatis seu ovato-lanceolatis acuminatis basi acutis vel attenuatis glabratis supra lucidis venis obliquis obsolete penninerviis, junioribus ramulisque tenuiter sericeo-pubescentibus; cymis laxifloris foliolosis folio æquilongis; calycis tubo cano-sericeo, lobis 5 ovatis obtusis; masc. ovario abortivo.

Var.? *β. foliis basi obtusis; floribus hermaphroditis ovario primum quinqueloculari, loculis deinde subbilocellatis.*

HAB. Ovolau and Muthuata, Feejee Islands: "a common shrub in open grounds."

There are here combined, with some misgiving, male specimens of the plant delineated on Plate 60, *B*, which have the *ovate or ovate-lanceolate leaves* more or less *tapering to both ends*, and a specimen with hermaphrodite flowers (the var. *β*.?), the *leaves* of which are mostly broader and *rounded or obtuse at the base*. No other difference of any consequence is noticed. The branches are slender; the *younger branchlets and nascent foliage* are *silky with a fine and slender pubescence*, which disappears with age, except on the midrib beneath or some of the lower surface of the leaves. The latter are 1½ to 2 inches long, opaque, lucid above, *obscurely and obliquely feather-veined*, on petioles of 2 or 3 lines in length. *Flowers in* axillary and terminal, many-flowered, paniculate, *loose cymes, as long as the subtending* leaf; the principal branches bracteate with small leaves, which on the slender and silky-pubescent pedicels are reduced to linear or subulate, mostly alternate bractlets. Flower-buds a line and a half in diameter. *Calyx-tube* in hermaphrodite flowers obovoid, *silky-canescent* and silvery; the *lobes* 5, *ovate, obtuse*, often rather unequal. Petals orbicular, white, somewhat ciliate. Stamens, &c., as in the genus. Flowers of the male specimens destitute of a style and of an ovary (the apex of the pedicel merely clavate-thickened): those of the hermaphrodite plant with a style as long as the stamens, tipped with a depressed-capitate stigma, and with a *five-celled ovary;* each cell, at the time of anthesis, showing a projection from its back (in the manner of *Vaccinium*, § *Cyanococcus*), which probably soon divides the cavity into two locelli. Ovules 3 or 4 in each proper cell, incurved. Fruit not seen.

This needs to be compared, especially the sterile plant here described, with Blume's *N. laxiflora* of New Guinea.

PLATE 60, *B.*—NELITRIS VITIENSIS: a flowering branch of the male plant, of the natural size. Fig. 1. A flower, with the pedicel, bract, bractlets, &c. 2. A bract, detached. 3. Calyx, from which the stamens and petals have fallen. 4. A petal. 5. A stamen.—*C.* Fig. 6. A flower of the hermaphrodite plant, the petals and stamens removed. 7. A flower-bud of the same; the ovary transversely divided. 8. Vertical section of the ovary.—The details more or less magnified.

10. CAMPOMANESIA, *Ruiz & Pav.*

1. CAMPOMANESIA CERASOIDES.

Psidium cerasoides, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 290.

HAB. Brazil, near Rio Janeiro. (In fruit.)

11. PSIDIUM, *Linn.*

1. Psidium Guajava, *Linn.*

Psidium Guajava, Linn. Spec. ed. 1, p. 470; Raddi, Mem. Pl. Bras. p. 2; Blume, Mus. Bot. Lugd.-Bat. p. 71.
P. pyriferum & *P. pomiferum*, Linn. Spec. Pl. ed. 2, et Auct.

Hab. Eimeo and Tahiti, Society Islands: "recently introduced, but naturalized and spreading rapidly." Sandwich Islands: introduced. The *Guaiva* was also noticed as largely naturalized around Rio Janeiro.

2. Psidium polycarpon, *Lamb.*

Psidium polycarpon, Lambert, in Trans. Linn. Soc. 11, p. 231, t. 17; DC. Prodr. 3, p. 235.

Hab. Rio Janeiro, Brazil. (Most probably no more than a variety of the common *Guaiva*.)

12. SONNERATIA, *Linn. f.*

1. Sonneratia acida, *Linn. f.*

Aubletia caseolaris, Gærtn. Fruct. 1, p. 329, t. 78.

Hab. Luzon, in the vicinity of Manilla. (In fruit.)

13. BACKHOUSIA, *Hook. & Harv.*

Backhousia, Hook. & Harv. in Hook. Bot. Mag. t. 4133.

1. BACKHOUSIA RIPARIA.

Backhousia myrtifolia & *B. riparia*, Hook. & Harv. in Hook. Bot. Mag. l. c.
Eugenia riporia, A. Cunn. ined.

HAB. Hunter's River, New South Wales. Also specimens presented by Mr. Cunningham.

The ripe fruit of this remarkable plant is not yet known. Judging from the ovary, it is probably dry and indehiscent. Our specimens manifestly connect the two species. I adopt, accordingly, the trivial name imposed by Cunningham, the discoverer of the plant.

14. ACICALYPTUS, Nov. Gen.

Calyx subulæformis, acute tetragonus, clausus; apice subulato-rostrato, operculiformi, sub anthesi circumscisse deciduo; fauce ultra ovarium longe producta. Petala 4, in operculum leviter cohærentia, sub anthesi dejecta. Stamina plurima, discreta, margini calycis tubi inserta: filamenta filiformia: antheræ biloculares, loculis ovalibus. Stylus filiformis: stigma obtusum. Ovarium biloculare, dissepimento tenui. Ovula in loculis 8–10, *anatropa, subcurvata?* (*Fructus ignotus, ut videtur carnosus indehiscens.*)—*Arbor vel arbuscula; foliis oppositis ovatis penninerviis impunctatis; floribus cymosis terminalibus.*

1. ACICALYPTUS MYRTOIDES, Sp. Nov. (Tab. 67.)

HAB. Feejee Islands: on the mountains of Muthuata, at an elevation of 2,000 feet.

Apparently a *tree* (the size not recorded), glabrous throughout; the branchlets corymbose, terete, rather slender, nodose. *Leaves opposite*, approximate, 1½ to 2 inches in length, with a petiole of 4 or 5 lines long, elliptical or *ovate*, acuminate (the tip rather obtuse), acute at the base, subcoriaceous, dull beneath, deep green and shining above, not *punctate*, copiously *feather-veined;* the slender but rather conspicuous veins sparingly reticulated, confluent into an undulate intramarginal false vein. *Cymes terminal*, trichotomous, compound, corymbose, many-flowered, somewhat exceeding the leaves; its divisions slightly angled; the pedicels very short, articulated with the flower. Bracts and bractlets caducous and not seen. *Flower-buds* half an inch long, 1½ to 2 lines wide in the middle, thence tapering moderately to the base, and upwardly narrowed into a *sharp and slender beak*, the whole between spindle-shaped and *awl-shaped, acutely four-angled*, and below the middle marked with 4 intermediate and less salient angles or nerves, very smooth: the continuous summit, representing the closed limb of the calyx, separates, a little below the base of the beak, by an even *circumscissile line, and falls as a lid;* but there is no external mark to indicate the separation before anthesis. *Petals* 4, small, inserted on the margin of the persistent tube of the calyx by a broad base, rounded, hooded, *lightly cohering into a lid* (in the manner of *Syzygium*), *and falling off together* when the calyptra of the calyx is detached. *Stamens very numerous*, inserted on the very edge of the calyx-tube, inflexed in the manner of the family before anthesis and received into the *throat* of the calyx, which is *as long as the* portion adnate to the *ovary: filaments filiform, distinct*, about 3 lines long: *anthers two-celled; the cells oval*, fixed by the middle, longitudinally dehiscent. *Style filiform*, as long as the throat of the calyx: *stigma obtuse. Ovary two-celled*, with thick and fleshy walls, the dissepiment very thin, probably obliterated in the fruit. *Ovules* 8 *to* 10 *in each cell*, somewhat ascending, anatropous, more or less curved. *Fruit* not seen: from the texture of the calyx it is probably *fleshy and indehiscent.*

Should this remarkable plant prove to have a fleshy fruit, as is most likely, it will rank next to *Calyptranthes*, from which the subulate and quadrangular calyx and the operculate corolla sufficiently distinguish it. If the fruit be capsular, the genus will be distinguished from *Eucalyptus* by the two-celled ovary, and the corolla of lightly coherent or separable petals, as well as by the foliage, inflorescence, and the form of the calyx. The name, compounded of ἀκή, *a point or edge*, and καλυπτὸς, *a covering*, indicates the affinities and one of the characters of the genus.

Plate 67.—Acicalyptus myrtoides: a flowering branch, of the natural size. Fig. 1. A flower-bud, enlarged. 2. Vertical section of the same. 3. Flower-bud, with the lid detaching. 4. Flower, with the ovary divided transversely.—The details enlarged.

15. EUCALYPTUS, *L'Her.*

1. Eucalyptus subulata, *A. Cunn.*

Eucalyptus subulata, A. Cunn.; Schauer, in Walp. Repert. 2, p. 924.
E. rostrata, Schlecht. in Linnæa, 29, p. 655? non Cav.

Hab. New South Wales. (Probably given by Mr. Cunningham.)

The abrupt beak of the operculum varies from 1½ to 3 lines long.

2. Eucalyptus marginata, *Smith?*

Eucalyptus marginata, Smith, in Trans. Linn. Soc. 3, p. 302?

Hab. Near Sydney, New South Wales. (Imperfect specimens.)

3. Eucalyptus acervula, *Sieber.*

Eucalyptus acervula, Sieber, Pl. Exsic. N. Holl. no. 469; DC. Prodr. 3, p. 217.

Hab. New South Wales; probably in the vicinity of Sydney.

4. Eucalyptus virgata, *Sieber, l. c.*

Hab. Hunter's River, New South Wales.

5. Eucalyptus radiata, *Sieber.*

Eucalyptus radiata, Sieber, l. c.; DC. Prodr. 3, p. 218, & Mem. Myrt. t. 7.

Hab. Vicinity of Hunter's River, New South Wales.

6. EUCALYPTUS BOTRYOIDES, *Smith.*

Eucalyptus botryoides, Smith, in Trans. Linn. Soc. 3, p. 287.
E. platypodos, Cav. Ic. Pl. 4, p. 23, t. 341.
E. pallens, DC. Prodr. 3, p. 219?

HAB. Near Sydney, New South Wales.

7. EUCALYPTUS MINIATA, *A. Cunn.*

HAB. Hunter's River, New South Wales. (Foliage only.)

This accords with a fruiting specimen in the Hookerian herbarium, so named by Allan Cunningham, likewise from Hunter's River, but it scarcely agrees with the character given by Schauer, in Walp. Repert. 2, p. 925.

8. EUCALYPTUS PANICULATA, *Smith?*

Eucalyptus paniculata, Smith, in Trans. Linn. Soc. 3, p. 287?

HAB. Sydney, New South Wales.

‡ *Species valde dubia.*

9. EUCALYPTUS MULTIFLORA, *Rich, in Herb.*

E.? foliis subalternis petiolatis oblongis acuminatis basi acutis æquilateris concoloribus laxe penninerviis venulosis costa venisque primariis subtus prominentibus; cymis paniculatis multifloris; pedunculis compresso-angulatis; capsulis subglobosis.

HAB. Near Caldera, Mindanao, one of the Philippine Islands.

The specimens consist of a leafy shoot, and of a leafless branch with the inflorescence of the previous season, bearing the persistent capsules. The latter show what appears to be the line of circumscissile dehiscence; otherwise there are no evident grounds for referring the plant to *Eucalyptus*. The *leaves* are not phyllodineous, and apparently not vertical: they are *unequally alternate, oblong, acuminate*, or at least acute at both ends, 4 or 5 inches long and 1½ or 2 inches wide, on petioles of half an inch in length, *equilateral*, chartaceous, thickly pellucid-punctate, dull and *of the same hue both sides, loosely feather-veined, the primary veins and the midrib prominent underneath*, but impressed above; the veinlets minutely reticulated. Branchlets, especially the fructiferous ones, somewhat angled. The flowers appear to have been in naked, terminal and axillary, *paniculate cymes; the peduncles, &c., compressed-angled, many-flowered;* the pedicels umbellately fascicled in threes and fives, as long as the *capsules*. The latter are *globular*, 2 lines in diameter, the summit, above the line from which the limb of the calyx has fallen, convex; there four-valved; within four-celled; each cell containing a large placenta, which has evidently borne numerous seeds. These, however, have all been shed.—I thus record the plant, under the name given by Mr. Rich in the collection, since Blume has published one or two *Eucalypti* from the Mollueças and other Malayan Islands, to which this plant may be related.

16. ANGOPHORA, *Cav.*

1. Angophora cordifolia, *Cav.*

Angophora cordifolia, Cav. Ic. Pl. 4, p. 21, t. 338; DC. Prodr. 3, p. 222.

Hab. Sydney, New South Wales.

2. Angophora lanceolata, *Cav.*

Angophora lanceolata, Cav. Ic. Pl. 4, p. 22, t. 338; DC. l. c.

Var. *β.* hispida, A. Cunn.: *foliis lanceolatis sensim acuminatis; pedunculis calycibusque setoso-hispidis.*

Var. γ. ANGUSTIFOLIA: *foliis linearibus; pedunculis calycibusque glabris.*

HAB. New South Wales, Hunter's River: in fruit. Var. β. Woolongong and near Sydney. Var. γ. Newington: in flower.

The specimens of var. α. (except that the leaves are chiefly opposite) exactly accord with the figure of Cavanilles, which also represents the plant with mature fruit. Those of var. β. with similar *lanceolate-acuminate leaves*, have the *inflorescence and calyx* somewhat hoary with a fine pubescence, and sparsely *setose* with reddish, apparently glandular bristles, which are however deciduous when the fruit is mature. The var. γ. differs in its narrower, nearly *linear leaves* (3 or 4 inches long and 3 to 5 lines wide, acuminate at both ends), and in having *no bristles and scarcely any pubescence* on the inflorescence and calyx;—in this respect agreeing with the character of *A. lanceolata*. The species is apparently polymorphous, and includes DeCandolle's *A. intermedia* also. A remarkable form of it occurs in a collection made at Moreton Bay, by Mrs. Mallard, kindly communicated by my excellent friend, N. B. Ward, Esq., of London. On the same individual, some of the lower leaves are lanceolate, gradually acuminate, and with a subsessile cordate-auriculate base; the rest are petioled, most of them lanceolate, but some are elliptical-oblong, as *A. intermedia* is characterized, like which the peduncles are more or less setose-hispid. The venation of the leaves, the flowers, &c., accord with the present species, not with *A. cordifolia*.

17. SYNCARPIA, *Tenore.*

1. SYNCARPIA LAURIFOLIA, *Tenore.*

Syncarpia laurifolia, Tenore, Ind. Sem. Hort. Neopol. 1839, & in Mem. Soc. Moden. 22 (1840), p. 7, t. 1.
Metrosideros glomeruliflora, Smith, in Trans. Linn. Soc. 3, p. 268; DC. Prodr. 3, p. 225.
Tristania albens, A. Cunn.; DC. Prodr. 3, p. 210.
Kamptzia albens, Nees, Diss. in Act. Acad. Nat. Cur. 18, Suppl. 1, t. 1, 2.

HAB. New South Wales, near Sydney and Cook's River. "Turpentine-tree" of the Colonists.

18. METROSIDEROS, *Rumph.*, *R. Br.*

* *Novo-Zelandicæ et Aucklandicæ.*

1. METROSIDEROS LUCIDA, *Menzies.*

Metrosideros lucida, Menzies, in Herb. Hook.; Smith, in Rees, Cycl.; A. Rich. Fl N. Zel. p. 333; A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 114; Hook. f. Fl. Antarc. p. 12, & Fl. N. Zeal. p. 67.
M. umbellata, Cav. Ic. Pl. 4, p. 20, t. 337; DC. Prodr. 3, p. 225, excl. patria.
Agalmanthus umbellatus, Hombr. & Jacquin. Voy. Astrol. & Zel. Bot. t. 1.
Melaleuca lucida, Forst. Prodr. Fl. Ins. Austr. p. 38.

Hab. Lord Auckland Islands: where it is the principal timber tree.

2. METROSIDEROS FLORIDA, *Smith.*

Metrosideros florida, Smith, in Trans. Linn. Soc. 3, p. 269; DC. l. c.; A. Cunn. l. c; Hook. f. Fl. N. Zeal. p. 66, t. 15.
Melaleuca florida, Forst. Prodr. Fl. Ins. Austr. p. 37.
Leptospermum scandens, Forst. Char. Gen. t. 36.

Hab. Bay of Islands, New Zealand.

3. METROSIDEROS ROBUSTA, *A. Cunn.*

Metrosideros robusta, A. Cunn. Bot. N. Zeal. l. c.; Hook. f. Fl. N. Zeal. p. 68, t. 17.
M. florida, Hook. Bot. Mag. t. 4471, non Smith.

Hab. Bay of Islands, New Zealand.

4. METROSIDEROS TOMENTOSA, *A. Rich.*

Metrosideros tomentosa, A. Rich. Fl. N. Zel. p. 336, t. 37; A. Cunn. l. c.; Hook. Bot. Mag. t. 4488; Hook. f. l. c.

Hab. Bay of Islands, Tippona, &c., New Zealand. (In fruit: the ordinary, and a glabrate form.)

5. Metrosideros scandens, *Banks & Solander.*

Metrosideros scandens, Banks & Soland. MS. & Ic. ined.; Gærtn. Fruct. 1, p. 172, t. 34, f. 10; Hook. f. Fl. N. Zeal. p. 69.
M. perforata, A. Rich. Fl. N. Zel. p. 334.
M. buxifolia, A. Cunn. l. c. p. 111; Hook. Bot. Mag. t. 4515.
Melaleuca perforata, Forst. Prodr. Fl. Ins. Austr. 37.
Leptospermum perforatum, Forst. Char. Gen. p. 72.

Hab. Bay of Islands, New Zealand.

6. Metrosideros hypericifolia, *A. Cunn.*

Metrosideros hypericifolia, A. Cunn. l. c.; Hook. f. Fl. N. Zeal. p. 68, t. 16

Hab. Bay of Islands, New Zealand.

* * *Polynesicæ (Taitensis et Vitiensis).*

7. Metrosideros collina. (Tab. 68.)

Leptospermum collinum, J. R. Forst. Char. Gen. Ins. Austr. p. 72, t. 38, f m–p.
Melaleuca æstuosa, G. Forst. Prodr. Fl. Ins. Austr. p. 38.

Var. α. VILLOSA: *ramulis cum inflorescentia foliisque junioribus (ovatis ovalibus seu ellipticis) tomentoso-villosis.*

Melaleuca villosa, Linn. f. Suppl. p. 342.
Metrosideros spectabilis, Gærtn. Fruct. 1, p. 172, t. 34, f. 9?
M. villosa, Smith, in Trans. Linn. Soc. 3, p. 268; DC. Prodr. 3, p. 224; Hook & Arn. Bot. Beech. Voy. p. 63; Guill. Zeph. Tait. p. 57.

Var. β. GLABERRIMA: *ramulis foliis calycibusque glabris; pedunculis nunc puberulis.*

Metrosideros villosa, var. *glaberrima*, Bertero, ex Guill. l. c.
M. diffusa, Hook. & Arn. Bot. Beech. Voy. p. 63? non Smith.

Var. γ. VITIENSIS; *ramulis foliisque ellipticis oblongisve glabris; inflorescentia calycibusque plus minus cano-sericeis; floribus nunc subpedicellatis.* (Tab. 68.)

HAB. Var. α. and β. Tahiti and Eimeo, Society Islands; common on ridges. γ. Feejee Islands; Ovolau, Muthuata, and Sandalwood Bay; at the elevation of from 100 to 2,000 feet.—A *Metrosideros*, mentioned by Dr. Pickering, as perhaps that of the Feejees but not that of Tahiti, was noticed on the mountains of Tutuila, one of the Samoan Islands, at an elevation of 2,000 feet; where it forms "a spreading tree, 30 feet high, with the trunk a foot in diameter; the leaves smooth; the flowers scarlet, but not very showy." There are no specimens of it in the collection.

The *M. villosa* of Smith, with the *young leaves, branchlets,* and especially the inflorescence canescent with a *villous-tomentose* down, passes so completely into glabrate and truly *glabrous* forms that it becomes advisable to restore the earliest specific name, that of the elder Forster. One of the intermediate varieties is doubtless the *M. diffusa* of Hooker and Arnott, not of Smith; the latter being a New Zealand species. The *leaves* vary from *ovate* or *oval* to *elliptical,* or even ovate-lanceolate, either rounded at both ends or acutish, or the base occasionally subcordate; the copious pinnated veins manifest on both sides but slender, minutely reticulated. Petioles 1½ to nearly 3 lines long. Cymes sometimes axillary towards the summit of the branches, usually terminal and in pairs, as described by Smith, but often solitary or else three together at the summit. *Flowers sessile* or nearly so, in threes or fives, at the summit of the partial peduncles; which distinguishes the plant from the Sandwich Island species. Stamens red. Ovary three-celled, enclosed in the tube of the calyx, to which its lower half is adnate. The mature capsule projects one-half beyond the crateriform calyx (the lobes of which are tardily deciduous), to which barely its base remains adherent, and not very firmly.

From the above I am unable specifically to distinguish the specimens from the Feejee Islands; var. γ. They mostly have rather narrower, *elliptical or oblong,* or even lanceolate-elliptical *leaves,* more or less narrowed at both ends, in some specimens, however, as broad as in the ordinary Tahitian forms, rarely inclining to obovate, all of them entirely *glabrous*, as are the branchlets. The *inflorescence*, however, and the *calyx* are densely *silky-canescent* or silky-pubescent; and the *flowers are slightly pedicellate*, especially the central ones of each cluster. Stamens red. Fruit not seen.

PLATE 68.—METROSIDEROS COLLINA, var. γ. VITIENSIS: a branch of the natural size. Fig. 1. Vertical section of a flower. 2. Flower, with the petals and stamens detached. 3. Transverse section of the ovary. 4. Ovules.—The details variously magnified.

* * * *Sandwicenses.*

8. METROSIDEROS LUTEA, Sp. Nov. (Tab. 69.)

M. foliis ovali-ellipticis utrinque sæpius rotundatis modice petiolatis tenuiter venosis subtus junioribus præsertim canescenti-tomentulosis; calycibus cum inflorescentia cano-tomentosis; floribus subsessilibus vel brevissime pedicellatis; petalis staminibusque luteis.

HAB. Hawaii, Sandwich Islands; in the vicinity of Hilo.

Apparently a tree of considerable size; the branchlets nearly terete, the younger ones only hoary with a fine pubescence. *Leaves oval*, or *broadly elliptical*, rarely verging to ovate, *rounded at both ends*, often retuse, sometimes slightly subcordate, coriaceous, 1½ to 2½ inches long, glabrous or early glabrate above, *hoary with a minute canescent tomentum underneath*, which is very tardily deciduous, closely feather-veined; the *veins slender* but perspicuous, reticulated, the basal ones produced into an intramarginal false vein. *Petiole rather conspicuous*, 2½ to 4 lines long. Cymes small, solitary or in pairs at the apex of the branches, not exceeding the leaves, very short-peduncled. Bracts caducous. *Flowers subsessile or very short-pedicelled* (the pedicel less than a line, or rarely a line and a half long, oftener scarcely any), usually in threes at the apex of the partial peduncles. *Calyx densely canescent-tomentose, as also the inflorescence*, about 2½ lines long, campanulate-turbinate, five-lobed; the lobes very obtuse. *Petals* tomentulose externally, "*yellow, as well as the stamens*," apparently pale. Filaments and style nearly an inch long. Ovary nearly as in *M.*

polymorpha; the free summit tomentulose. Mature capsule not seen.

This appears to be distinguished from all other Hawaiian species by its yellow and subsessile flowers; in the latter character as well as in aspect approaching the Tahitian *M. collina.* Should these characters prove inconstant, it will add another to the numerous and wide variations of *M. polymorpha.*

PLATE 69, *B.*—METROSIDEROS LUTEA: a flowering branch, of the natural size. Fig. 1. Flower vertically divided through the ovary. 2. Calyx and pistil, divided transversely, showing the cells of the ovary. 3. Ovules.—The analyses magnified.

9. METROSIDEROS RUGOSA, Sp. Nov. (Tab. 69.)

M. ramulis quadrangulatis; foliis orbiculatis brevissime petiolatis bullato-rugosis penninerviis, venis validis in pagina inferiori sæpius ferrugineo-tomentosa prominentibus; inflorescentia calycibusque tomentosis; floribus subsessilibus rubris.

HAB. Oahu, Sandwich Islands; on the mountains behind Honolulu. (Also gathered by Gaudichaud, in the voyage of the Bonite.)

Apparently a small tree or shrub, with *quadrangular branchlets;* only the ultimate ones tomentose. *Leaves orbicular,* about an inch in diameter, thick and coriaceous, strikingly *bullate-rugose* above, where the *strong pinnate* veins are impressed, while *underneath* they are *very prominent,* as well as the thick costa; the upper surface is minutely pubescent when young, but soon glabrate; the *lower tomentose* with a thick and close, nearly persistent, tawny or *ferrugineous wool: petioles very short,* but manifest, a line or a line and a half in length. Cymes small, solitary or in pairs at the summit of the branches; the peduncles and their divisions short and stout, whitish-*tomentose,* the whole subtended by rather conspicuous and coriaceous bud-scales, which are somewhat persistent after the evolution of the cyme. Bractlets as long as the calyx, oval, tomentose, somewhat ferrugineous, soon deciduous. *Pedicels very short or scarcely any.* Flowers about as large as in *M.*

polymorpha. *Calyx very tomentose* externally with whitish wool, turbinate, five-lobed. *Petals and stamens deep red;* the former a little pubescent externally. Ovary deeply immersed in the bottom of the calyx, three-celled, its summit only free. Fruit unknown.

This is surely distinct from *M. polymorpha*, however polymorphous that may be. The stout veins of the leaves, so salient underneath, the bullate upper surface, and the rusty or ochre-coloured wool of the lower surface, along with the subsessile flowers, at once distinguish it. Few specimens were gathered. Those of Gaudichaud's collection are, I believe, destitute both of flowers and fruit.

PLATE 69, *A.*—METROSIDEROS RUGOSA: a branch, in flower, of the natural size. Fig. 1. Vertical section of a flower, enlarged. 2. Ovules, magnified.—The analyses magnified.

10. Metrosideros polymorpha, *Gaud.*

Metrosideros polymorpha, Gaud. Bot. Voy. Freyc. p. 99, & 482, t. 108, 109; Hook. & Arn. Bot. Beech. Voy. p. 82; Schauer, in Rel. Meyen. p. 331.

Var. α. *foliis subrotundo-ellipticis vel orbiculatis basi cordatis brevissime petiolatis tomento tenui canescentibus, ramulorum confertissimis vel imbricatis sæpe sessilibus; cymis thyrsoideis multifloris calycibusque (parvulis) incanis.*

Var. β. *foliis crasso-coriaceis orbiculatis seu rotundo-ellipticis basi cordatis vel retusis breviter petiolatis supra mox glabris subtus cum inflorescentia calycibusque (majusculis) tomento crasso cano vel fulvo lanosissimis.—Ludit, foliis demum glabratis.*

Var. γ. *foliis crasso-coriaceis subrotundis vel ovato-ellipticis basi subcordatis retusisve breviter petiolatis utrinque cum inflorescentia calycibusque (parvulis) glabris.*

Var. δ. *foliis coriaceis glabris modice petiolatis modo ovalibus modo anguste oblongis basi acutis vel obtusis; cymis laxifloris calycibusque (majusculis) tomento denso villoso incanis.*

Var. ε. *foliis ovalibus lato-ellipticis oblongisve basi rotundatis obtusis vel acutiusculis modice petiolatis glabris; inflorescentia calycibusque pube tenui canescenti-puberulis demum glabratis.*

Var. ζ. *foliis tenuiter coriaceis anguste oblongis seu lanceolatis acutiusculis basi in petiolum breviusculum vel longiusculum attenuatis glabris; cymis multifloris calycibusque (parvulis) glabris vel puberulis.*

Hab. Sandwich Islands; abundant; gathered by all collectors from Nelson, in Cook's third voyage, and Menzies, to the present time. Var. *α*. Oahu, in the mountains behind Honolulu. *β*. Hawaii; both near the coast and on Mouna Loa, &c., to the elevation of 8,000 or 9,000 feet. Maui, at the crater of Haleakala. Mountains of Kauai: some forms connecting this with succeeding varieties. *γ*. Mouna Loa, Hawaii, at an elevation of 8,000 feet. *δ*. Hawaii, on Mouna Kea, and in the district of Puna. A form allied to it from the mountains of Kauai. *ε*. Oahu, in the mountains behind Honolulu and Waianae. Hawaii, near the coast, in the districts of Waimea and Puna. *ζ*. Oahu, in the mountains behind Honolulu, &c.

Although furnished with a fuller suite of specimens, probably, than ever have been brought together before, I am equally unable with preceding botanists to distinguish any of these extremely varied forms into separate species. The first and the last, as different as two species could well be conceived to be, are yet connected by a series of intermediate states, of which the more prominent are characterized above as varieties. Var. *α*., one extreme form, is remarkable for its small, *rounded-cordate and subsessile, or very short-petioled leaves, crowded or even imbricated on the branchlets*, from an inch to half an inch in length, *finely canescent-tomentose* or cinereous underneath, early glabrate above, coriaceous, but seldom very thick: the *cymes* incline to be *thyrsoid* and prolonged; the flowers rather small; the *calyx and peduncles densely white-tomentose*. This passes into var. *β*. (which includes Gaudichaud's tab. 108), with very *thick, rounded leaves* (an inch to an inch and a half long), *mostly heart-shaped at the base*, and more *distinctly petioled;* the upper surface at first pubescent, but soon glabrous; the *lower very densely woolly-tomentose*, as well as the crowded cymes and larger calyxes. The wool inclines to rub off from the older leaves. With this is connected an early glabrate state, passing into others with oval or elliptical leaves (sometimes 2 inches long) from Kauai. Var. γ. is a glabrous, or perhaps early glabrate state of β.; the specimens with young fruit only. Var. δ. has thinner and *glabrous leaves, either oval or oblong, often acute at the base, rather conspicuously petioled;* but the *loose cymes, calyx,* &c., are very *densely villous-tomentose.* Var. ε. embraces a variety of specimens, with *glabrous and distinctly petioled leaves* varying from broadly oval to narrowly oblong, either thick or thinnish; the *inflorescence and calyx minutely canescent or pubescent,* but early glabrate. This passes insensibly into var. ζ. the *smoothest* and most slender form, with the narrowest and thinnest *leaves* (*narrowly oblong and lanceolate, acutish,* with the *base tapering into a petiole* of about 3 lines long); the cymes are loose, and the flowers as small as in var. α.—All have red and pedicelled flowers; the pedicels 1½ to 2 lines long. The veins of the leaves are slender, more or less reticulated, sometimes with a pair or two of stronger ascending ones from the base. Rarely the limb of the calyx is six-lobed; the lobes very obtuse. The upper half of the three-celled ovary is free from the tube of the calyx. The globular capsule, which projects somewhat beyond the calyx, becomes nearly free from the tube which encircles it.—This species, in some of its forms at least, becomes a large tree, the *Ohea* of the Hawaians.

In the collection from Tahiti, there is a single imperfect specimen of what appears to be the *M. polymorpha,* var. ζ., having pedicelled flowers and lanceolate leaves, glabrous throughout. Whether truly of this species must be left for future investigators to determine.

11. Metrosideros Macropus, *Hook. & Arn.* (Tab. 70.)

M. glabra; foliis longe petiolatis; petiolo lamina ovata seu ovato-oblonga paullo vel dimidio breviore; cyma confertiflora; floribus (*rubellis?*) *pedicellatis; bracteis bracteolisque ovatis et ovato-lanceolatis magnis involucrantibus deciduis; capsula calycis tubo fere inclusa ad medium usque libera.*

Metrosideros Macropus, Hook. & Arn. Bot. Beech. Voy. p. 83.

Hab. Oahu, Sandwich Islands; on the mountains behind Honolulu. (Also gathered by Macrae, Lay & Collie, Gaudichaud, and Seemann.)

A tree, probably of considerable size, *glabrous throughout;* the branchlets somewhat angled. *Leaves ovate or ovate-oblong,* sometimes rhomboid-ovate, coriaceous, rather dull, acutish, either rounded, obtuse, or acute at the base, obscurely punctate, copiously feather-veined; the veins oblique, very slender but rather conspicuous, equally so on both sides, sparsely branched, connected by minute reticulations, terminating in an inframarginal vein: *petioles elongated, sometimes almost as long as the blade,* commonly half or one-third its length. *Cymes* terminal, usually geminate, subsessile, many-flowered, *crowded,* evolved from a large scaly bud, the scales of which remain persistent for some time, as *ovate* or oblong pointed *bracts,* of a coriaceo-chartaceous texture, half an inch long; the *pedicels* (1½ to 2, or in fruit 3 lines long) subtended by similar but smaller *ovate-lanceolate bractlets,* which are *early deciduous,* as in the other species. Flowers rather larger than in the largest-flowered forms of *M. polymorpha;* the calyx nearly similar, glabrous or barely puberulent. Petals and stamens apparently pale or flesh-colour. Ovary three-celled, the glabrous summit free barely to the middle. *Capsule nearly included* in the turbinate tube of the calyx (of which the spreading lobes are persistent), *free to the middle,* adnate below, three-valved, many-seeded. Seeds fusiform-subulate, not much pointed.

The characters of this species would appear to be amply sufficient: but forms may occur between it and *M. polymorpha* var. ε. The flowering specimen figured is from the collection of Mr. Seemann.

PLATE 70, *B.*—METROSIDEROS MACROPUS: branches in flower and fruit. Fig. 1. Vertical section of a flower. 2. Ovary, transversely divided. 3. Capsule, dehiscent in the calyx. 4. Seeds. 5. Embryo. —The details magnified.

19. KUNZEA, *Reichenb.*

1. KUNZEA CORIFOLIA, *Reichenb.*

Kunzea corifolia, Reichenb. Consp. Reg. Veg. p. 175; Schauer, in Pl. Preiss. 1, p. 124. *Metrosideros corifolia,* Vent. Hort. Malm. t. 46; DC. Prodr. 3, p. 225.

Hab. In the neighbourhood of Sydney, New South Wales.

2. Kunzea Schaueri, *Lehm.*

Kunzea Schaueri, Lehm. Pl. Preiss. 1, p. 124.
Metrosideros capitata, Smith, in Trans. Linn. Soc. 3, p. 273; DC. l. c.
Melaleuca eriocephala, Sieber, Pl. N. Holl. Exsic. no. 322.

Hab. New South Wales; with the foregoing species.

20. CALLISTEMON, *R. Br.*

1. Callistemon pinifolium, *DC.*

Callistemon pinifolium, DC. Prodr. 3, p. 223; Hook. Bot. Mag. t. 3980.

Hab. Hunter's River, New South Wales. (In fruit.)

2. Callistemon lanceolatum, *DC. l. c.*

Hab. New South Wales; probably from near Sydney.

21. MELALEUCA, *Linn.*

1. Melaleuca styphelioides, *Smith.*

Melaleuca styphelioides, Smith, in Trans. Linn. Soc. 3, p. 275; DC. Prodr. 3, p. 212.

Hab. New South Wales: probably from the vicinity of Sydney.

2. Melaleuca ferrea, *A. Cunn., ined.*

Hab. New South Wales; the locality not recorded. Probably given, as were some other specimens, by A. Cunningham, as it accords with specimens of his *M. ferrea*, "the *Iron-wood* of Moreton Bay," in the Hookerian Herbarium.

The species resembles *M. genistifolia*, Smith; but the leaves are only one-nerved and obscurely punctate.

3. Melaleuca Fraseri, *Hook.?*

Melaleuca Fraseri, Hook. Bot. Mag. t. 3210?

Hab. Hunter's River, New South Wales.

4. Melaleuca nodosa, *Smith, l. c.*

Hab. Hunter's River, New South Wales.

5. Melaleuca erubescens, *Otto?*

Melaleuca erubescens, Otto, ex DC. Prodr. 3, p. 214?

Hab. New South Wales; where it has also been gathered by Fraser and Cunningham. Probably a variety of *M. erubescens*, with more filiform and coarsely dotted leaves.

6. Melaleuca thymifolia, *Smith.*

Melaleuca thymifolia, Smith, Exot. Bot. 1, t. 36; DC. Prodr. 3, p. 214.

Hab. Hunter's River and near Sydney, New South Wales.

7. Melaleuca linariifolia, *Smith, l. c.*

Hab. New South Wales. (The specimens gathered by A. Cunningham.)

8. Melaleuca squarrosa, *Smith, l. c.*

Melaleuca squarrosa, Smith, in Trans. Linn. Soc. 6, p. 300; Labill. Pl. N. Holl. 2, t. 169; DC. l. c.
M. myrtifolia, Vent. Hort. Malm. t. 47.

Hab. In the vicinity of Sydney, New South Wales.

22. TRISTANIA, *R. Br.*

1. Tristania neriifolia, *R. Br.*

Tristania neriifolia, R. Br. in Ait. Hort. Kew. 4, p. 417; DC. Prodr. 3, p. 210.

Hab. Newington, New South Wales.

The leaves are sometimes alternate, and the peduncles three-five-flowered.

2. Tristania laurina, *R. Br. l. c.*

Tristania laurina, R. Br. l. c.; DC. Prodr. 3, p. 210.

Hab. Newington, New South Wales.

23. FABRICIA, *Gærtn.*

1. Fabricia myrtifolia, *Gærtn.*

Fabricia myrtifolia, Gærtn. Fruct. 1, p. 175, t. 35; Sims, Bot. Mag. t. 1304.

Hab. Hunter's River, New South Wales. (In fruit.)

24. LEPTOSPERMUM, *Forst.*

1. Leptospermum ericoides, *A. Rich.*

Leptospermum ericoides, A. Rich. Fl. N. Zel. p. 338; Hook. f. Fl. N. Zeal. p. 70.

Hab. Bay of Islands, New Zealand.

2. Leptospermum scoparium, *Forst.*

Leptospermum scoparium, Forst. Char. Gen. p. 72, t. 36; Smith, in Trans. Linn. Soc. 3, p. 262; DC. Prodr. 3, p. 227; A. Rich. l. c.; Hook. f. l. c.

Hab. Bay of Islands, New Zealand. Near Sydney, New South Wales. (Several varieties.)

3. Leptospermum lanigerum, *Ait.*

Leptospermum lanigerum, Ait. Hort. Kew. 2, p. 156; Lodd. Bot. Cab. t. 1192; DC. Prodr. 3, p. 227.

Hab. Sydney, New South Wales. (A form with glabrate leaves.)

4. Leptospermum myrtifolium, *Sieber.*

Leptospermum myrtifolium, Sieber, Pl. N. Holl. Exsic. no. 314; DC. l. c. p. 228.

Hab. Near Sydney, New South Wales.

5. Leptospermum flavescens, *Smith?*

Leptospermum flavescens, Smith, in Trans. Linn. Soc. 3, p. 262? DC. l. c.?

Hab. Hunter's River, New South Wales. (An imperfect fragment.)

6. LEPTOSPERMUM JUNIPERINUM, *Smith, l. c.*

HAB. Vicinity of Sydney and Hunter's River, New South Wales.

7. LEPTOSPERMUM ARACHNOIDEUM, *Smith. l. c.*

HAB. New South Wales; in the vicinity of Sydney.

25. BÆCKIA, *Linn.*

1. BÆCKIA LINIFOLIA, *Rudge.*

Bæckia linifolia, Rudge, in Trans. Linn. Soc. 8, p. 297, t. 12; DC. Prodr. 3, p. 229.

HAB. Sydney, New South Wales.

2. BÆCKIA LEPTOCAULIS, *Hook.*

Bæckia leptocaulis, Hook. Ic. Pl. t. 298.

HAB. New South Wales: probably near Sydney.

This is intermediate in character between *Bæckia* and *Schidiomyrtus*, which, as well as *Harmogia* and *Euryomyrtus*, will probably be restored to *Bæckia*.

26. SCHIDIOMYRTUS, *Schauer.*

1. SCHIDIOMYRTUS DIOSMÆFOLIA, *Schauer.*

Schidiomyrtus diosmæfolia, Schauer, in Linnæa, 17, p. 237, & Walp. Repert. 2, p. 920.
Bæckia diosmifolia, Rudge, in Trans. Linn. Soc. 8, p. 298, t. 13; DC. l. c.

Hab. New South Wales; in the neighbourhood of Sydney.

2. Schidiomyrtus crenulata, *Schauer, l. c.*

Bæckia crenulata, DC. Prodr. 3, p. 230.
Jungia imbricata, Gærtn. Fruct. 1, p. 175, t. 35.

Hab. In the neighbourhood of Sydney, New South Wales.

27. EURYOMYRTUS, *Schauer.*

1. Euryomyrtus diffusa, *Schauer, l. c.*

Bæckia diffusa, Sieber, in DC. Prodr. 3, p. 230.
B. affinis & *B. prostrata*, Hook. f. Ic. Pl. t. 284, ex Schauer.

Hab. Hunter's River, New South Wales.

28. HARMOGIA, *Schauer.*

1. Harmogia densifolia, *Schauer.*

Harmogia densifolia, Schauer, in Linnæa, 17, p. 238; Walp. Repert. 5, p. 735.
Bæckia densifolia, Smith, in Trans. Linn. Soc. 3, p. 260; DC. l. c.

Hab. Newington, New South Wales.

29. DARWINIA, *Rudge.*

1. Darwinia fascicularis, *Rudge.*

Darwinia fascicularis, Rudge, in Trans. Linn. Soc. 11, p. 299, t. 22; Schauer, Myrt. Xerocarp. in Act. Nat. Cur. 19, Suppl. 2, p. 188, t. 2.

Hab. Sydney, New South Wales.

2. Darwinia taxifolia, *A. Cunn.*

Darwinia taxifolia, A. Cunn. in Field. Mem. N. S. Wales, p. 152.
D. laxifolia, Schauer, Myrt. Xerocarp. l. c. p. 190.

Hab. Near Sydney, New South Wales.

The name is written *laxifolia* by Schauer, who opines that this was the word intended, and that it became *taxifolia* by a typographical error.

30. CALYCOTHRIX (male Calytrix), *Labill.*

1. Calycothrix scabra, *DC.*

Calythrix scabra, DC. Prodr. 3, p. 208, & Mem. Myrt. t. 1.
Calycothrix scabra, Schauer, Myrt. Xerocarp. l. c. p. 248.

Hab. Near Sydney, New South Wales.

2. Calycothrix glabra, *R. Br.*

Calythrix glabra, R. Br. in Bot. Reg. t. 409; DC. l. c.
Calytrix tetragona, Labill. Pl. N. Holl. 2, p. 8, t. 146 (mala), fide Schauer.
Calycothrix Billardieri, Schauer, Myrt. Xerocarp. l. c.

Hab. Near Sydney, New South Wales.

Schauer drops the original trivial name, on account of its inappropriateness: but, in that case, the name imposed by Brown and adopted by DeCandolle should be continued.

ORD. MELASTOMACEÆ.

SUBORD. I. MEMECYLEÆ.

1. MEMECYLON, *Linn.*

1. MEMECYLON VITIENSE, Sp. Nov.

M. ramulis subteretibus; foliis uninerviis aveniis oblongis obtusis sæpiusve in acumen obtusum vel retusum productis basi in petiolum breviusculum attenuatis siccatis subtus flavidis; pedunculis solitariis brevissimis plurifloris; pedicellis nudis fructu globoso seu ovoideo lævi dimidio brevioribus.

Var.? *β. foliis latioribus nunc ovalibus apice rotundatis subtus haud flavescentibus.*

HAB. Feejee Islands: Muthuata and Ovolau, at the elevation of 1,000 to 1,500 feet.

The specimens are all in fruit only: they are said to belong to a shrub, of 8 or 10 feet in height. Branchlets nearly terete. *Leaves* oblong, 1½ to 2½ inches long, from 7 lines to an inch wide, usually tapering more or less to both ends, the apex into a short and *obtuse or retuse acumination,* the base *acutely narrowed into a petiole* of 2 or 3 lines in length, sometimes the apex is directly obtuse; the texture coriaceous; the midrib prominent; the *veins obsolete,* or a few transverse ones barely perceptible; the colour above fuscous, *beneath yellowish. Peduncles solitary* in the axils of the leaves, rarely in pairs, *very short* (a line or two, rarely 3 lines long), nearly terete, evidently *several-flowered;* the *pedicels ebracteolate,* 1½ or 2 lines long in fruit, in a simple fascicle or cymule. *Fruit globose*, or in the narrowest-leaved specimens *ovoid* (but these probably less mature), not at all depressed, apparently dry, *smooth and even*, 4 lines in diameter; the minute limb of the calyx apparently truncate. Cotyledons apparently foliaceous and much contortuplicate.

The var.? β. may not improbably belong to another species, which cannot be characterized without better materials. The *leaves* are larger and *broader, sometimes oval* and *rounded at the apex*, mostly oblong, *not drying yellowish underneath*, or scarcely so. They closely resemble those of *M. edule*, of which it may, perhaps, prove a variety; but the more simple and shorter fruiting inflorescence occurs in the axils of the leaves of the season.

Several species of *Memecylon* from Cuming's collection were characterized by Presl, in his Epimeliæ Botanicæ, which bears the date of 1849, but seems not to have been published until much later. This publication appears to have been known to Blume, who, late in 1851, published characters of many additional species, in his Museum Botanicum Lugduno-Batavum. In the Annales des Sciences Naturelles for 1852 (in a part not published, however, until 1853), Naudin has elaborated the species contained in the herbarium of the Paris Museum, without being aware either of Presl's or of Blume's publications. There is a great confusion of names in consequence.

2. MEMECYLON CALDERENSE, Sp. Nov. (Tab. 71.)

M. ramulis teretiusculis; foliis brevissime petiolatis oblongo-lanceolatis sensim acuminatis basi rotundatis vel obtusis penninerviis, venis infra marginem arcuato-conjunctis; pedunculis plerumque binis vel ternis e nodis ramorum jam foliis denudatorum ortis subangulatis 3–5-radiatis umbellato-multifloris; pedicellis flore æquilongis; calycis limbo truncato integerrimo, fauce lamellis 8 septulata.

HAB. Near Caldera, Mindanao; one of the Philippine Islands.

Branches slender; the *branchlets nearly terete*, or obscurely angled. *Leaves very short-petioled* (the petioles only a line and a half in length), *oblong-lanceolate, gradually acuminate* into a slender point, 4 to 6 inches long, 1½ to 2½ inches wide, *rounded*, or often somewhat contracted, but *obtuse at the base*, membranaceo-chartaceous in texture, dull, a little paler underneath, *pinnately-veined* from a rather prominent midrib, the considerably manifest *veins arcuately confluent within the margin* into a sinuous false vein. *Inflorescence* in the specimens all below the foliage of the season, from nodes the leaves of which have fallen. *Peduncles mostly 2 or 3 together, somewhat angular*, half an inch long, or rarely shorter, *dividing into 3 to 5 rays*, each bearing a *many-flowered umbel*, or the stronger ones proliferous. *Pedicels about the length of the flower-bud*, half a line long, after anthesis becoming a line or more in length, not bracteolate. *Calyx* turbinate, *with a truncate and entire border, within furnished with* 8 *very salient radiating lamellæ*, forming as many deep cells in which the inflexed anthers lie before anthesis, and with as many intermediate, slightly salient ribs, to the summit of which the stamens are attached. Corolla small, perhaps caducous before expansion; the petals 4, very broad. Anthers oblong, on short filaments, the cells nearly straight and parallel, the connective produced below into a thickish, but flat, oblong-lanceolate, acutish appendage, which exceeds the cells in length, and in the bud is superior, almost equalling the unexpanded petals. Style filiform: stigma terminal, minute. Ovary one-celled, with a slight trace of several parietal projections. Ovules 12, sometimes 8, oblique, scarcely reniform, on stout funiculi. Fruit not seen.

I cannot identify this with any of the numerous Malayan species which have recently been published. It appears to be allied to *M. paniculatum* of Jack, and *M. acuminatissimum* of Blume. Particularly conspicuous in this species are the radiating lamellæ within the calyx, well indicated by Loureiro in the character of *Scutula*, but not mentioned by DeCandolle, who seems in other respects to have misapprehended Loureiro's description.

PLATE 71.—MEMECYLON CALDERENSE: a branch, in flower, of the natural size. Fig. 1. A flower-bud. 2. Vertical section of the same. 3. A petal from the bud. 4, 5, 6. Anterior, posterior, and lateral views of a stamen, in the inverted position it occupies in the bud. 7. A flower, after the corolla and stamens have fallen. 8. Vertical section of the same. 9. An ovule from the same. 10. Transverse section of an ovary and its 12 ovules.—The details magnified.

SUBORD. II. MELASTOMEÆ.

(MELASTOMEÆ, ASTRONIEÆ, & KIBESSIEÆ, Naudin.*)

2. ASTRONIA, *Blume.*

ASTRONIA, Blume, Bijdr. p. 1080, Rumphia, 1, p. 20, t. 6, 7, & Mus. Bot. Lugd. p. 9; Naudin, in Ann. Sci. Nat. ser. 3, 18, p. 257.

1. ASTRONIA FRATERNA, Sp. Nov. (Tab. 72.)

A. glaberrima; foliis longe petiolatis oblongis acuminatis basi acutis manifeste triplinerviis (prætermisso utroque nervo tenui submarginali); cymis corymbosis; pedicellis gracilibus; calycis (fructiferi) limbo persistente aperto quinquedentato; ovario quinqueloculari; placentis ex ima columella ortis.

HAB. Society Islands: on mountain ridges of Tahiti and Eimeo.

Except the *Melastoma Taitense*, this is the only Melastomaceous plant in the collection made at the Society Islands, or mentioned in Dr. Pickering's manuscript notes. It was naturally taken for the *Melastoma glabra* of Forster (the *Astronia Forsteri*, Naudin), with which indeed, if truly distinct, it must have been confounded. That species, however (of which I have seen original specimens in the British Museum, and possess recent ones gathered by Mr. Bidwill), has a calyx the limb of which is perfectly closed, and separates in anthesis by a transverse circumscission, in the form of a calyptra. In all the present specimens (which unfortunately are only fructiferous ones) the whole *limb of the calyx is persistent, open*, and rather deeply divided into 5 (or rarely 6), pretty regular, broad and rounded teeth or lobes. Whether this distinction is a constant one further observation must determine. I should scarcely venture to rely upon it, were it not strengthened by a difference in the venation of the leaves; which, in *A. Forsteri* are rather obscurely three-nerved, the lateral nerves near the margin and inconspicuous; while ours are *manifestly triple-ribbed* from just above the base, the lateral ribs almost as strong as the middle one, and at some distance within the margin, which moreover is provided with a slender and inconspicuous nerve. The shrub is said to be about 5 feet high. The leaves have a yellowish tinge when dry, especially underneath; they are *oblong, abruptly acuminate*, from 1½ to 3½ inches long, more or less *acute at the* base, on *slender petioles* of 8 to 12 lines long, *glabrous*, as is the whole plant, minutely dotted underneath, apparently of a chartaceous texture. *Cymes corymbose*, terminal, many-flowered; the bracts all deciduous. Fructiferous *pedicels slender*, about 3 lines long. Tube of the fructiferous calyx globular, and crowned with the conspicuous limb, together 2½ lines long, smooth. *Ovary five-celled. Placentæ inserted at the very base of the columella*, oblong, scarcely dilated upwards, ovuliferous throughout. Style, &c., not seen. Capsule, as in other species, not properly dehiscent, but the dry epicarp decays or falls away in fragments, and the thin endocarp splits into numerous pieces, leaving a frame of 10 or more, simple or forked, at length stellately spreading nerves, surrounding the placentæ and columella.

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* M. Naudin's primary divisions of the order are neatly characterized; but the first three are too closely related, and connected by too many known transitions to entitle them to the rank of suborders.

PLATE 72, *A.*—ASTRONIA FRATERNA: a branchlet. Fig. 1. Fructiferous calyx, enlarged. 2. Vertical section of the same.

2. ASTRONIA PICKERINGII, Sp. Nov. (Tab. 72.)

A. glabra; foliis longe petiolatis ovalibus oblongisve utrinque subacutis nunc basi obtusis 3–5-nerviis; cyma corymbosa composita laxiflora; pedicellis gracilibus; alabastris subglobosis; calycis limbo clauso demum aperto ultra ovarium longiuscule producto, margine in dentibus brevissimis 9–20 *irregulariter fisso; antherarum connectivo deorsum gibberoso; ovario quinqueloculari; placentis e fundo loculorum ortis.*

Var. *α.* SAMOENSIS: *foliis siccatis viridulis, inflorescentia ramulisque novellis ferrugineo-puberulis.*

Var. β. Vitiensis: *foliis in sicco flavescentibus; inflorescentia glabriore; pedicellis paullo brevioribus.*

Hab. Samoan or Navigators' Islands (var. α.); in the mountains of Tutuila. β. Feejee Islands; on Ovolau, at an elevation of about 1,000 feet.

As well as can be judged from the incomplete specimens, these two forms appear to belong to the same species. The Samoan plant has the leaves greenish when dry, without any trace of yellow; and the inflorescence shows a minute and scurfy, ferrugineous pubescence, which is soon deciduous; its pedicels are 2 or 3 lines long. The Feejee specimen has a yellowish hue in the foliage; and the inflorescence (in fruit) shows scarcely a trace of the ferrugineous scurf. Otherwise no difference is discernible: but we have no flowers or buds of the latter, to compare with the unexpanded flower-buds of the former. The floral characters given, therefore, belong only to the Samoan plant.—A shrub or small tree, the var. β. said to be 20 feet high; the branches terete and nodose. *Leaves glabrous, oval or oblong, acutish at both ends, or the base often obtuse,* or even rounded, chartaceous in texture, dull, 4 or 5 inches long, 1½ to 2½ wide, *three-ribbed* from the base, besides an intramarginal nerve on each side, which is often so conspicuous as to make the leaves *five-ribbed;* the ribs connected by rather prominent, transverse veins, from which proceed less evident reticulated veinlets. *Petioles elongated* (from 12 to 18 lines long), slender. *Cyme compound, corymbose, loosely many-flowered,* terminal, trichotomous; its branches angular, nodose. Bracts caducous. *Pedicels slender. Flower-buds globular,* or obovoid-globose; those by no means full grown 2 lines in diameter, *closed,* the fleshy calyx showing no trace of lobes. But in specimens past anthesis the calyx is found to be open, and campanulate in form, produced conspicuously beyond the ovary, with the truncate *margin irregularly cleft into* 9 *to* 20 *short teeth.* Petals 5, short and broad in the bud, convolute in æstivation, said to be "white, and as long as the calyx," in Dr. Pickering's notes. Stamens 10; the filaments very short in the undeveloped flower-buds: *anthers* dolabriform, notched at the base, where the salient *connective is produced into a strong gibbosity.* Style in the bud columnar, as long as the calyx, terminated with the depressed-capitate and entire stigma of the genus: after anthesis it becomes much exserted, filiform, and half an inch long. *Ovary five-*

celled; the cells at first depressed; *the placentæ borne at the very base* of the cells at a little distance from the axis, directed obliquely upwards and outwards, flattened, dilated upwards, notched at the summit, covered with innumerable linear-oblong ovules, which are marked with a conspicuous brown rhaphe. Seeds not seen, nor mature fruit; the immature fruit 3 lines in diameter. But there are vestiges of old fruit, like that of the foregoing species; showing that the pod, at first fleshy, at length dry, is apparently irregularly ruptured; the epicarp at length falling away, and leaving a fibrous framework of numerous persistent nerves, within which is the thin lacerated lining of the cells, and the persistent thickened placentæ.

PLATE 72, *B.*—ASTRONIA PICKERINGII: a branch of the var. *β.* past flowering, of the natural size. Fig. 1. Vertical section of a flower-bud of var. *α.* 2, 3. Stamens from the same. 4. Calyx and style of var. *α.*, after flowering. 5. Vertical section of the same. 6. Transverse section of the ovary. 7. A placenta, detached. 8. Ovules.—The details enlarged.

3. ASTRONIA CONFERTIFLORA, Sp. Nov.

A. foliis longe petiolatis ovalibus obtusis basi rotundatis 3–5-nerviis, costis subtus ramulisque junioribus cum cyma composita corymbosa confertiflora rufo-pubescentibus; floribus in ramulis ultimis capitato-congestis subsessilibus; calyce glandulis rufis consperso, limbo ultra ovarium breviter producto, margine irregulariter 8–10-crenato; ovario tri-quadriloculari; placentis e fundo loculorum ortis.

HAB. Feejee Islands: in the Sandal-wood district of Vanua levu; on the banks of streams.

We have this in fruit only. If rightly identified with a plant recorded in Dr. Pickering's notes, it is a shrub, 8 feet high. Branchlets stout, terete, nodose, glabrate; the ultimate ones somewhat quadrangular, and when young clothed with a thick and scurfy *reddish-brown pubescence,* which soon disappears. *Leaves oval, obtuse at both ends, or more rounded at the base,* 4 to 6 inches long, 2½ to 3½ wide, chartaceous, rather bright green, glabrous, except the *three principal ribs,* which when young are *ferrugineous-pubescent underneath;* these spring from the base of the blade, or rarely from just within it; there are a pair of more slender, somewhat wavy, intramarginal nerves, which if counted make the leaf *five-ribbed:* the petioles about an inch and a half long. *Cyme* terminal, ample, *corymbose, compound,* repeatedly trichotomous; the divisions stout, somewhat quadrangular, *ferruginous-pubescent;* the *ultimate peduncles bearing numerous, capitate-crowded, sessile or nearly sessile flowers,* forming together a very compact inflorescence. Bracts caducous. Flower-buds, petals, stamens and style not seen; the specimen being wholly in the fruiting state. Fruiting *calyx* globular, rather depressed, and open at the top, *little produced beyond the flat summit of the ovary, the truncate margin minutely and irregularly crenate-dentate into* 8 *or* 10 *rounded teeth;* the surface *sprinkled with reddish-brown, glandular dots. Capsule* depressed-globose, about 2 lines in diameter, *three- or four-celled,* with a dilated clavate-semilunar strictly *basilar placenta* in each cell; the thin epicarp breaking away irregularly, the thin endocarp splitting longitudinally into 6 or 8 valves and falling away, leaving 6 or 8 strong persistent nerves, surrounding the dilated placentæ. Seeds innumerable, thickly covering the placentæ, subclavate, or dolabriform, angled by mutual pressure, with a brown lateral rhaphe.

Compared with an authentic but imperfect specimen of *A. macrophylla,* Blume, and with Naudin's description, this species is well marked by its very obtuse leaves, its dense and corymbose cyme, with sessile and congested flowers, the many-toothed edge of the calyx, the 3–4-celled ovary, and the thickish, angled (not acicular) seeds. The leaves, moreover, are not distinctly triplinerved, as in that species.

4. Astronia? subcordata, Sp. Nov.

A.? foliis longe petiolatis ovalibus vel subovatis breviter acuminatis obtusisve basi cordatis glabratis triplinerviis; petiolis ramulisque junioribus cum cyma corymbosa ferrugineo-hirtis demum glabratis.

Hab. Upolu, one of the Samoan or Navigators' Islands: in the mountains near Apia.

The specimens, apparently of a tree or large shrub, have shed the flowers and fruit from the inflorescence; but the plant is probably a congener of the foregoing species. The branches are very stout, terete, nodose; the *younger parts* hirsute with a dense and coarse *ferruginous pubescence*, as are the *elongated petioles* (2 or 3 inches long); and the nascent foliage is ferruginous with a similar, but shorter pubescence. *Leaves oval, sometimes inclining to ovate, glabrate*, chartaceous, from 5 to 8 inches long and 3 to 5 inches broad, either *obtuse or slightly acuminate, cordate* at the base, but not strongly so, *triple-ribbed* from near the base, and with one or two pairs of sinuous intramarginal nerves, transversely veined, and with evident coarsely reticulated veinlets. *Cyme corymbose, trichotomous, compound*, scarcely exceeding the petioles; the ramifications *ferrugineous-hirsute*, angled, evidently many-flowered.

Some rufous-hirsute foliage of another Melastomaceous plant, perhaps of this genus, occurs in the Samoan collection, from the mountains of Upolu. Also, under the name of *Melastoma? cereacea*, Dr. Pickering, in his notes, mentions a shrub, from the mountains of Tutuila, occuring at the elevation of about 2,000 feet, with broad, five-ribbed and smooth leaves, a smooth and five-cleft calyx, and with white, wax-like petals: this is probably an *Astronia;* but I do not find indications of any corresponding specimens in the collection. There are some indeterminable fragments of other species from the Feejee Islands.

3. ASTRONIDIUM, Nov. Gen.

Flores tetrameri. Calycis tubus hemisphæricus, nudus; limbus repando-quadridentatus seu inæqualiter pluri-(6–8)-denticulatus. Petala 4. Stamina 8, æqualia: filamenta complanata, subulata, brevia: antheræ oblongo-lineares, antice rima duplici longitudinali dehiscentes; connectivo dorsali carnoso angusto basi calcarato. Stylus filiformis: stigma minutum, simplicissimum. Ovarium omnino adnatum, tri-quadriloculare: placentæ e fundo loculorum exortæ, superne dilatatæ, compressæ. Capsula globosa. Semina numerosissima.—Arbuscula glabra, micrantha, microcarpa, facie Astroniæ.

The plant in question differs from *Astronia,* it would seem generically, in its tetramerous flowers, calcarate anthers, and minute stigma.

1. Astronidium parviflorum, Sp. Nov. (Tab. 72.)

Hab. Ovolau and Ambau, Feejee Islands: along the banks of streams.

A *small tree*, about 20 feet high, glabrous, or the nascent parts minutely ferrugineous-pubescent. Branches terete; the ultimate branchlets somewhat angled. Leaves oblong or elliptical, opposite, obtuse or acutish at both ends, or the uppermost slightly and bluntly acuminate, 3 or 4 inches long, from an inch to 2 inches wide, chartaceous in texture, drying of a fuscous hue, smooth, three-ribbed, and with a pair of submarginal nerves; the ribs connected by transverse veins, which are rather conspicuous underneath, and reticulated with minute veinlets. Petioles from half an inch to an inch long. Cyme terminal, decompound, paniculate-corymbose, trichotomous; the ramifications compressed-angular, subtended by small foliaceous bracts, which are early deciduous; the ultimate ramifications 3–7-flowered at the summit. *Flowers small* (a line and a half long), very numerous, crowded, on pedicels of a line or less in length. *Calyx naked*, between *hemispherical and campanulate;* the free portion or *limb* almost as long as the proper tube, the margin *repandly four-toothed* (the teeth broad and obtuse), or *irregularly* 6–8-*toothed*, nearly in the manner of *Astronia confertiflora*, &c. Petals 4, small (white?), convolute in æstivation, probably caducous. *Stamens* 8, *equal* and similar, inserted on the calyx at its junction with the summit of the ovary: *filaments flattened and dilated, subulate*, the apex inflexed in æstivation in the manner of the order, about the length of the limb of the calyx: *anthers oblong-linear*, as long as the filament; the *connective narrow, but fleshy*, produced downwardly into a basal *spur* of half the length of the filament; its anterior face occupied by the two narrowly linear and opposite anther-cells, which are extended and curved a little round the obtuse apex, each *dehiscent by a longitudinal line* from top to bottom. *Style filiform*, terminated by a *small* and simple (not in the least capitellate or dilated) *stigma. Ovary* 3–4-*celled*, depressed-globose, *entirely adnate* to the tube of the calyx. *Placentæ rising from the very base of the cells*, wholly distinct from the axis, *dilated and flattened upwards*, broadly wedge-shaped, emarginate at the summit, thickly covered with minute oblong ovules. *Capsule gibbose*, slightly depressed, 1½ to 2 lines in diameter, smooth, with rather thin walls, 3–4-celled; the dehiscence not known. *Seeds exceedingly numerous*, filling the cells, oval or obovate, angled by mutual pressure, with a thin and lax testa. Embryo not seen.

PLATE 72, *C.*—ASTRONIDIUM PARVIFLORUM: a flowering branch, of the natural size. Fig. 1. Portion of the inflorescence and fruit, of the natural size. 2. Two flower-buds, and a central flower past anthesis, the petals and stamens fallen. 3. A petal. 4, 5. Stamens, from a flower-bud. 6. Vertical section of the calyx and ovary, after flowering. 7. Placenta, viewed posteriorly. 8. A fruit, vertically divided. 9. Transverse section of a fruit. 10. A seed.—The analyses magnified.

4. PLEIOCHITON, *Naudin, Mss.*

Flores pentameri, involucrati. Involucrum generale tri–quadriphyllum, singuli floris bi–triphyllum. Calycis tubus turbinatus; dentes 5 *duplicati; exteriores subulati, cum interioribus brevioribus membranaceis obtusissimis inferne connati. Petala* 5, *ovata, acuta. Stamina* 10, *æqualia, aut vix non æqualia: antheræ lineari-subulatæ, apice subrecurvæ, poro unico tenuissimo apertæ; connectivo non producto nec appendiculato. Stylus filiformis: stigma acutum. Ovarium ovoideum, liberum, apice verticillo setarum coronatum, quadri–quinqueloculare. Placentæ axiles. Ovula subglobosa innumera.—Frutex? vel arbor fere glabra; ramis validis ad nodos setoso-hispidis; foliis ovalibus crasse coriaceis; inflorescentia terminali; floribus cum bracteis foliaceis involucrantibus capitato-congestis.*

1. PLEIOCHITON CRASSIFOLIA, *Naudin, Mss.* (Tab. 73.)

HAB. In the Organ Mountains, Brazil (according to the tickets which accompany the specimen).

A *nearly glabrous shrub or tree;* with terete *stout branches, bristly-hispid at the nodes;* the ultimate branchlets obscurely angular, sparsely hispid when young, soon glabrate. *Leaves oval*, nearly obtuse, rounded and sometimes emarginate at the base, entire, *thick and coriaceous* in texture, perhaps somewhat fleshy in the living plant, dull, about 3 inches long and 2 inches wide, strongly three-ribbed, and with a pair of less conspicuous nerves near the margin; the ribs prominent underneath and at first furnished with a few scattered hispid hairs; the veins immersed and obscure: petioles stout, from 2 to 4 lines in length. Peduncles terminating the branches, about 6 or 9 lines long, sparsely hispid when young, usually once or twice trichotomous, the divisions subtended with ovate or oblong, leaf-like, closely sessile bracts; each partial peduncle (4 to 9 lines long) terminated with a several-flowered *capitate glomerule*, or a cluster of 3 sessile glomerules, composed of thickish and *foliaceous involucral and involucellate bracts*, subtending and enclosing the sessile flowers. *Bracts of the involucre* 3 or 4, broadly oval, very obtuse, slightly tinged with purple; of the *involucel* 2, or sometimes 3, similar to those of the common involucre, but narrower and somewhat carinate below the middle, as long as or longer than the flower they embrace. *Calyx* 3 lines long, glabrous; the *tube turbinate*, somewhat five-angled, lightly ten-nerved; the *limb five-cleft; the teeth double; the exterior subulate* from a broad base, thick, very acute, nearly a line and a half long, at first setose-pointed, and often furnished with a stout bristle in the intervening sinuses or near their margin: the *interior teeth membranaceous, considerably shorter, very obtuse, connate with the exterior* to above the middle. *Petals* 5, *ovate, acute*, exceeding the outer calyx-lobes, purple? *Stamens* 10, *equal and similar*, or very nearly so: filaments filiform, naked, as long as the *anthers:* the latter *linear-subulate*, with the *apex a little recurved, opening by a minute terminal pore:* the *connective wholly destitute of any appendage* or *protuberance*. *Style filiform*, as long as the stamens: *stigma acute*, punctiform. *Ovary ovoid, free* from the calyx, except the very base, glabrous and naked, but with a *crown of several* (8 or 10) *strong bristles* surrounding the base of the style, 4–5-celled; with as many *placentæ* projecting from the axis. *Ovules very numerous*, minute, *roundish*, amphitropous or campylotropous? Fruit not seen.

I am indebted to M. Naudin of Paris, the distinguished recent monographer of this order, for the investigation and name of this remarkable plant, which appears so unlike any known American *Melastomaceæ*, as to suggest the doubt whether the specimen may not have found its way into the Brazilian collection through some mischance. Its aspect, indeed, is more like that of some Oriental or Oceanic species; but I find no record that can apply to it in Dr. Pickering's MS. notes of the insular collections. M. Naudin considers the plant to be the type of a new genus, of his tribe *Miconiales*, if truly American, to stand near *Clidemia* (from which it does not widely differ in its floral characters); or to be appended to the subtribe *Dissochætеæ*, in case it should prove to be of Oceanic origin. The name alludes to the congested and multibracteate or involucrate inflorescence, which forms a striking character in the plant.

PLATE 73.—PLEIOCHITON CRASSIFOLIA: a flowering branch, of the natural size. Fig. 1. A general involucre, displayed. 2. Involucel and the enclosed flower-bud. 3. An unopened flower. 4. Vertical section of the same. 5. A petal. 6. Anterior, and 7, posterior view of a stamen. 8. Pistil, detached. 9. Transverse section of a five-celled, and 10, of a four-celled ovary. 11. An ovule.—The details variously magnified.

5. HENRIETTEA, *DC.*

1. HENRIETTEA SUCCOSA, *DC.*

Henriettea succosa, DC. Prodr. 3, p. 104; Naudin, in Ann. Sci. Nat. ser. 3, 18, p. 104. *H. Brasiliensis*, Casaretto, Nov. Stirp. Bras. p. 85; Walp. Repert. 5, p. 716.

HAB. Organ Mountains, near Rio Janeiro, Brazil.

6. LEANDRA, *Raddi.*

1. LEANDRA VILLOSA, *DC.*

HAB. Rio Janeiro, and in the Organ Mountains, Brazil.

2. LEANDRA? ANGUSTIFOLIA, *DC.*

Leandra? angustifolia, DC. Prodr. 3, p. 154; Naudin, l. c. p 90.

Hab. Organ Mountains, Brazil; in the neighbourhood of Rio Janeiro.

There is only a poor specimen, with one or two very young flower-buds, which furnish little towards completing Naudin's description. There are 6 triangular and acuminate small petals, and 12 stamens, the connective thickened or gibbous at the base posteriorly. Only the hexamerous flowers exclude it from *Clidemia*, as restricted by Naudin.

7. CLIDEMIA, *Don, Naudin.*

1. Clidemia Nianga, *DC.*

Clidemia? Nianga, DC. Prodr. 3, p. 163; Gardn. in Hook. Lond. Jour. Bot. 2, p. 344.
C. stenopetala & *C. longibarbis*, DC. l. c.?

Hab. Brazil, near Rio Janeiro: Organ Mountains; a later state, the flowers or fruits fallen, and with thinner leaves.

2. Clidemia botryophora, *Naudin.*

Clidemia botryophora, Naudin, in Ann. Sci. Nat. ser. 3, 17, p. 350.

Hab. Organ Mountains, Brazil.

3. Clidemia leptostachya, *Gardner.*

Clidemia leptostachya, Gardner, in Hook. Lond. Jour. Bot. 1, p 172.
C. salicifolia, Naudin, in Ann. Sci. Nat. l. c. p. 364, ex char.

Hab. Brazil; in the vicinity of Rio Janeiro.

This is nearly allied to *C. amygdaloides* (a common plant on the Corcovado, where Gardner gathered both species), as Gardner remarks, and most probably is no more than a narrow-leaved variety of it.

4. Clidemia althæoides, *Naudin.*

Clidemia althæoides, Naudin, in Ann. Sci. Nat. ser. 3, 17, p. 563?

Hab. Brazil; in the Organ Mountains, near Rio Janeiro.

An imperfect specimen; with the leaves more tomentose underneath, and the fruit larger than *C. althæoides* is described: otherwise it accords too well to be separated. A withered remaining petal is lanceolate and very acute. The soft and hirsute, dense, rufous pubescence of the branchlets is reflexed. The flowers are conspicuously pedicelled; else the plant might, perhaps, have been referred to *C. retropila*, DC.

5. Clidemia marginata, *DC.*

Clidemia marginata, DC. Prodr. 3, p. 156; Naudin, l. c. p. 362.

Hab. Near Rio Janeiro, Brazil: and a smoother form from the Organ Mountains.

6. Clidemia confertiflora, *DC. l. c.*

Hab. Near Rio Janeiro, Brazil: in forests.

7. Clidemia scandens, *Gardner.*

Clidemia scandens, Gardner, in Hook. Lond. Jour. Bot. 2, p. 34.

Hab. Organ Mountains, Brazil. (Perhaps the *C. Epibaterium*, DC.)

8. Clidemia dispar, *Gardner, l. c.*

Hab. Organ Mountains, Brazil.

This is well characterized by Gardner; but the name is not well chosen, since the leaves of each pair, although sometimes very unequal, are not rarely of about the same size. The flowers are much congested on the branches of the thyrsus, and densely hirsute externally. Calyx-teeth short and triangular, rather blunt; the throat 10-ribbed inside. Petals oblong-ovate, or at first broadly ovate, pointed. The narrowed apex of the three-celled ovary is free. The species needs to be compared with *C. Carassana*, DC.

9. CLIDEMIA DASYTRICHA, Sp. Nov.

C. foliis ovalibus seu ovato-oblongis acuminatis basi obtusis subdenticulatis quinquenerviis supra glabratis subtus pube simplici brevi indutis, costis cum petiolis brevibus ramulisque subtetragonis setis debilibus patentibus iisdem hispidulis creberrime vestitis; panicula terminali; floribus in ramulis patentibus glomerato-congestis; calyce hispidulo, dentibus subulatis recurvis; petalis lanceolatis acuminatissimis.

HAB. Organ Mountains, Brazil.

We have only a rather imperfect specimen of this apparently well-marked and undescribed species, which belongs to Naudin's section *Euclidemia*. The stem is probably shrubby or frutescent. The *somewhat quadrangular ultimate branches*, like the *short petioles* (4 to 6 lines long) and the principal *ribs of the leaves underneath, are thickly clothed*, at least when young, with fulvous, rather coarse and long, but *weak and spreading hairs, which are themselves minutely hispid* or barbed for their whole length. This pubescence becomes matted and somewhat furfuraceous, and probably is detached when old. *Leaves* ample, from 5 to 7 inches long, equal or unequal in the pairs, *oval or ovate-oblong, acuminate, minutely denticulate, obtuse at the base, membranaceous* in texture, green and early *glabrate above*, or minutely setulose-scabrous, and with some simple, short, and stiff bristles persistent on the ribs, softly *pubescent with short and simple* crisped hairs underneath, *five-ribbed;* the lateral ribs near the margin and weaker, the three stronger ones often originating just above the base: the transverse veins very numerous, and connected by similar veinlets. *Panicle terminal*, shorter than the leaves, furfuraceous-tomentose; its *branches spreading*, the ultimate divisions terminated by small and *dense glomerules* of sessile or subsessile flowers. *Calyx* scarcely a line in diameter, *hispid* with short and spreading hairs, campanulate; the 5 *teeth subulate* and recurved, furnished with short and rounded, adnate, internal appendages. *Petals* 5, *lanceolate and very sharply acuminate*, small. Anthers 10, oblong. Ovary three-celled, hispid at the base of the style. Fruit not seen.

10. Clidemia chætocalyx, Sp. Nov. (Tab. 74.)

C. ramulis gracillimis teretibus, junioribus pube stellata furfuraceo-puberulis; foliis (cujusque jugi sæpe inæqualibus) longe petiolatis membranaceis ovatis seu lanceolato-ovatis acuminatis subcordatis quinquenerviis glabris setoso-ciliatis; paniculis terminalibus paucifloris laxis; pedunculis pedicellisque setoso-hispidis; calyce setosissimo, dentibus aristæformibus tubo campanulato longioribus basi cum appendicibus internis lanceolatis parvis coalitis; petalis subulato-acuminatissimis; ovario triloculari.

Hab. Brazil; in the Organ Mountains.

Stem herbaceous? *Branchlets slender, terete*, diffuse; the older glabrate; the younger ones clothed with a *minute and furfuraceous stellular pubescence. Leaves (of the same pair often unequal*, sometimes equal), *long-petioled* (the slender petioles about an inch long, puberulent like the branchlets), thin and *membranaceous, ovate or lanceolate, ovate, acuminate, subcordate* with a narrow sinus, about 2 inches long, green both sides, *glabrous* or nearly so, except the 5 ribs, which are puberulent underneath and often hispid-bearded next their origin; the innermost arising a little above the base; the margin entire, *ciliate* with long and spreading bristles. *Panicle terminal*, or becoming lateral by innovation, small, short-peduncled, *loose, few-flowered;* the slender and spreading *peduncles and pedicels strongly hispid* with long and spreading bristles, and stellately puberulent. Bracts linear, setose-ciliate. *Calyx* strongly setose-hispid; the *tube campanulate* or somewhat hemispherical, a line and a half long; its truncate margin bearing 5 *awn-shaped teeth*, of 2 (or in fruit 3) lines long, spreading, sparsely setose, each with a small and fragile *internal appendage semi-*

adnate to its base. Petals 5, narrow, *subulate-acuminate*, rather shorter than the calyx-teeth. Anthers linear-oblong, narrowed upwards. Style filiform, elongated: stigma minute, simple. *Ovary three-celled.* Fruit dry, globular, setose, 2 lines in diameter, three-celled; the partitions very thin. Seeds very numerous, obovoid, angled, with a smooth testa, marked on one side by a broad and dark brown rhaphe.

PLATE 74.—CLIDEMIA CHÆTOCALYX: a branch, of the natural size. Fig. 1. Vertical section of a flower. 2. A petal. 3. A stamen. 4. Fruit (with the persistent calyx-lobes), divided transversely. 5. A seed.—The details variously magnified.

11. CLIDEMIA OOCARPA, Sp. Nov.

C. ramulis compresso-angulatis glabris; foliis ovali-oblongis utrinque acuminatis in petiolum brevem attenuatis serrulatis quintupli–septuplinerviis supra glabellis subtus hirtellis; panicula terminali multiflora glabrata; floribus cymulosis subsessilibus; calyce urceolato parce hirtello, dentibus subulatis tubo paullo brevioribus, appendicibus obsoletis; petalis oblongis acuminatis; fructu ovoideo triloculari.

HAB. Brazil; in the Organ Mountains.

There is only an imperfect, fruiting specimen, with one or two withered petals and stamens remaining to certify the genus. The species is apparently a new one. The branch is rather stout, apparently herbaceous, and, as well as the young *branchlets, glabrous, compressed-angled. Leaves* ample, 4 to 6 inches long and 2 or 3 wide, rather membranaceous, *oval-oblong, acuminate at both ends, tapering at the base into a very short petiole, serrulate,* strigose when young but soon *nearly glabrate above, minutely hirsute beneath* with a simple pubescence; the *ribs* 5 *to* 7, springing in pairs along the narrowed base, the uppermost pair more remote and stronger; the transverse veins and veinlets very numerous and conspicuous underneath. *Panicle terminal,* becoming alar by innovation, open, sessile; its branches glabrous, except a few small bristles; the *flowers cymulose, almost sessile,* at least the central ones. *Bractlets* setaceous, minute. *Calyx urceolate, sparsely and minutely hispid;* the 5 *teeth subulate,* 1½ to 2 lines long, *rather shorter than the tube*, at least after anthesis, spreading; the internal *appendages obsolete.* The withered *petals oblong, sharply acuminate.* Anthers oblong, narrowed upwards, opening by a terminal pore, inappendiculate. *Fruit* (immature) 3 lines long, *ovoid*, contracted between the apex and the persistent calyx-teeth, *three-celled*, very many-seeded.

12. Clidemia Brackenridgei, Sp. Nov.

C. ramulis gracilibus subangulatis petiolisque minutim lanulosis; foliis (cujusque jugi inæqualibus) oblongo-lanceolatis acuminatis basi acutiusculis integerrimis trinerviis membranaceis glabris; panicula terminali pauciflora laxa; floribus pedicellatis; calyce fulvo-pubente, dentibus triangulatis inappendiculatis tubo brevioribus; petalis e basi lata subulato-acuminatis; ovario triloculari.

Hab. Brazil; in the Organ Mountains.

Of this also we have only a single small specimen; a *slender branch*, which is *somewhat angled*, and the upper part, as well as the *petioles*, inflorescence, &c., clothed with a *fine lanulose pubescence*, which falls off with age. *Leaves oblong-lanceolate*, or narrowly oblong, conspicuously *acuminate, rather acute at the base, entire*, not ciliate, *glabrous*, except the 3 ribs, which are minutely puberulent underneath, veiny, and with an obscure submarginal nerve, *membranaceous*, pale beneath. The two of each pair are *unequal*, one of them 4 or 5, the other 1½ to 2½ inches long. *Panicle terminal*, small and simple, *loosely few-flowered;* the *flowers pedicelled. Calyx fulvous-pubescent*, 1½ lines long; *the* 5 *triangular teeth shorter* than the somewhat turbinate *tube*, and shorter than the *triangular-subulate and sharply acuminate petals;* the *internal appendages wanting.* Anthers oblong, narrowed upwards, opening by a terminal pore. *Ovary three-celled.* Fruit not seen.

13. Clidemia (Oxymeris) pulchra.

Oxymeris pulchra, Chamisso, fide spec. ex Herb. Berol.

Hab. Brazil; in the Organ Mountains.

The imperfect specimen, without petals or stamens, accords very well with a fruiting one from Sellow's collection, distributed from the Royal Berlin herbarium, under the name of "*Oxymeris pulchra*, Cham.;" a species which I find nowhere published. Our specimen has the ribs of the leaves more bearded underneath, and similar bristly hairs occur on the petioles, and sparingly on the branchlets. It is related to *C. alpestris*, Gardn., but distinct. Perhaps it may not be distinct from *Oxymeris ciliata* of Martius; which, it may be remarked, cannot bear the name of *Clidemia Martii*, given it by Naudin (in Ann. Sci. Nat. p. 375), since he has already a *C. Martiana* in the same volume, p. 340.

14. CLIDEMIA (OXYMERIS) PICKERINGII, Sp. Nov.

C. glaberrima, herbacea? diffuse ramosa; ramulis gracilibus angulatis; foliis membranaceis ovalibus seu obovatis utrinque acuminatis petiolatis integerrimis longe supra basim triplinerviis et nervo utrinque marginali donatis; panicula terminali parva laxiflora; alabastris acuminatis; calyce turbinato, dentibus brevissimis callosis; petalis e basi lata subulato-acuminatissimis; antheris obtusissimis.

HAB. Organ Mountains, Brazil.

A *slender* flowering branch, of an apparently *herbaceous and diffuse* plant, entirely *glabrous*, except some minute resinous-like atoms on the *angular branchlets* and other new parts. *Leaves membranaceous, obovate or oval*, 2 or 3 inches long, abruptly and conspicuously *acuminate, tapering at the* base into a petiole of 5 to 10 lines in length, dull, paler beneath, very *entire, triplinerved above the base* a considerable distance, and with a slender *submarginal nerve* on each side; the transverse veins not prominent: the leaves of each pair somewhat unequal. *Panicle terminal*, *small* and simple, with slender spreading branches, *loosely-flowered;* usually three flowers at the extremity, the middle one subsessile, the lateral short-peduncled. Bracts minute, subulate. *Flower-buds* 2½ lines long, fusiform, much *acuminate. Calyx turbinate*, rather oblong, slightly puberulent, the truncate margin furnished with 5 *very short callous teeth*, apparently destitute of internal appendages. *Petals subulately long-acuminate from a broad* *base*, white, a line and a half long: at their insertion within are two or three slender setæ to each, as long as the subulate filaments. *Anthers* narrowly oblong, not narrowed upwards, *very obtuse*. Style slender: stigma minute. Ovary three-celled, many-ovuled. Fruit not seen.

This species is doubtless allied to Naudin's *Clidemia acutiflora*, also from the Organ Mountains; but on comparison it was seen to be distinct.

There remains an imperfect fruiting specimen, also gathered in the Organ Mountains, with a five-celled ovary and aristiform calyx-teeth, probably of this genus; but I cannot determine, nor venture to characterize it.

8. STAPHIDIUM, *Naudin*.

1. Staphidium biserratum, *Naudin*.

Staphidium biserratum, Naudin, in Ann. Sci. Nat. ser. 3, 17, p. 305.
Clidemia biserrata, bullosa, umbonata, & forte spicata, DC. Prodr. 3, p. 158.

Hab. Vicinity of Rio Janeiro, Brazil.

2. Staphidium pauciflorum, *Naudin, l. c.*

Clidemia pauciflora & C. crenata, DC. Prodr. 3, p. 157.

Hab. Brazil; with the preceding species.

9. MICONIA, *Ruiz & Pav., Naudin*.

Miconia, Cremanium, Diplochita, Chænopleura, Jucunda, Graffenrieda, Decarphe, Angustinea, Hartigia, & Glossocentrum, Auctorum, fide Naudin, l. c.

1. Miconia (Jucunda) staminea, *DC.*

Melastoma staminea, Desv. in Lam. Dict. 4, p. 53.
Miconia staminea, DC. Prodr. 3, p. 187; Naudin, in Ann. Sci. Nat. ser. 3, 16, p. 123.
Graffenrieda jucunda, Mart. & Zucc. Nov. Gen. & Spec. 3, t. 276, forma angustifolia.
Jucunda Lhotskyana & J. Martiana, Cham. in Linnæa, 9, p. 456.

Hab. Brazil, near Rio Janeiro, and in the Organ Mountains.

2. Miconia brunnea, *DC.*

Miconia brunnea, DC. Prodr. 3, p. 184; Naudin, l. c. p. 200.

Hab. Brazil, near Rio Janeiro; or in the Organ Mountains.

3. Miconia cinerascens, *Miquel?*

Miconia cinerascens, Miquel, in Linnæa, 22, p. 543?

Hab. Brazil; in the Organ Mountains.

The plant before me belongs to *Eumiconia*, *Paniculares* § 1, a, of Naudin's arrangement. It is apparently the same as no. 1296 of Pohl's collection, communicated by the Vienna herbarium to that of Hooker. Except that the pubescence is at first of a rusty or ferrugineous hue, and the calyx is scarcely costate, it accords so well with Miquel's character of *M. cinerascens* that it would not be proper to establish a new species upon it.

4. Miconia divaricata, *Gardner.*

Miconia divaricata, Gardner, in Hook. Lond. Jour. Bot. 2, p. 345.

Hab. Organ Mountains, Brazil.

The branches of the panicle are scarcely divergent in these specimens.

5. Miconia fasciculata, *Gardner.*

Miconia fasciculata, Gardner, in Hook. Lond. Jour. Bot. 1, p. 533.

Hab. Brazil; near Rio Janeiro, probably on the Corcovado, and Organ Mountains.

6. Miconia depauperata, *Gardner.*

Miconia depauperata, Gardner, in Hook. Lond. Jour. Bot. 2, p. 346.

Hab. Organ Mountains, Brazil. (Foliage only; which accords with that of Gardner's plant.)

7. Miconia Sellowiana, *Naudin.*

Miconia (Amblyarrhena) Sellowiana, Naudin, in Ann. Sci. Nat. l. c. p. 206.
Cremanium Sellowianum, Cham. in Herb. Berol.

Hab. Rio Janeiro and Organ Mountains, Brazil.

8. Miconia paludosa, *Naudin, l. c.*

Cremanium paludosum, Gardner, in Hook. Lond. Jour. Bot. 2, p. 347.

Hab. Brazil; in the Organ Mountains.

9. Miconia prasina, *DC.*

Miconia prasina, DC. Prodr. 3, p. 188; Naudin, in Ann. Sci. Nat. l. c. p. 172.
M. attenuata, affinis, & sepiaria, DC. l. c. fide Naudin.

Hab. Organ Mountains, Brazil.

10. MICONIA (CHÆNANTHERA) CHÆNOPLEUROIDES, *Naudin, l. c.*

Cremanium chænopleuroides, Gardner, in Hook. Lond. Jour. Bot. 2, p. 349.
Miconia late-crenata, Naudin, in Ann. Sci. Nat. l. c. p. 239, ex char. (excl. syn. DC.?)

HAB. Organ Mountains, Brazil. (The inflorescence mostly in a diseased state.)

A few other specimens, probably of this genus, occur in the collection, in a state too imperfect for determination.

10. HUBERIA, *DC.*

1. HUBERIA OVALIFOLIA, *DC.*

Huberia ovalifolia, DC. Prodr. 3, p. 167; Nandin, in Ann. Sci. Nat. ser. 3, 15, p. 336, & 16, t. 25, f. 1.
H. resinosa, Presl, Symb. Bot. 1, p. 58, t. 37.

HAB. Rio Janeiro, Brazil.

11. BERTOLONIA, *Raddi.*

1. BERTOLONIA NYMPHÆÆFOLIA, *DC.*

Bertolonia nymphææfolia, Raddi, Pl. Brasil. Add.; DC. Prodr. 3, p. 113; Naudin, in Ann. Sci. Nat. l. c. p. 318.
Rhexia nymphæifolia, Kunth. in Bonpl. Rhex. t. 53.

HAB. Organ Mountains, Brazil. (In fruit.)

2. BERTOLONIA LEUZEANA, *DC. l. c.*

Rhexia Leuzeana, Bonpl. Rhex. p. 144, t. 54, 55.

HAB. Rio Janeiro, Brazil. (A state with rounder leaves.)

12. ANPLECTRUM.*

APLECTRUM, Blume, in Flora, 1831, p. 502, & Mus. Bot. Lugd.-Bat. p. 37; Naudin, in Ann. Sci. Nat. ser. 3, 15, p. 303, t. 15; non Nutt. (1818).

1. ANPLECTRUM? OVALIFOLIUM, Sp. Nov.

A. fere glaberrimum; foliis late ovalibus seu ovato-rotundis breviter acuminatis petiolatis submembranaceis tripli–quintuplinerviis; cymis pulverulento-puberulis folio brevioribus; calycis dentibus brevissimis callosis, denticulis externis nullis; petalis ovatis acutis; antheris 8 *homomorphis.*

Aplectrum? ovalifolium, Naudin, in scheda.

HAB. Feejee Islands; at Sandal-wood Bay, Vanua-levu.

Shrub, or small tree, *glabrous*, except a very minute pulverulent pubescence on the nascent parts; the branches terete, nodose. *Leaves nearly membranaceous*, about 2 inches long, or one of each pair smaller, conspicuously *petioled* (the petiole half an inch long), *broadly oval or rounded-ovate, short-acuminate*, rounded but not cordate at the base, dull, paler beneath, very entire, *triple-ribbed* from near the base, and with a pair of lateral, nearly basal nerves, which approach the margin. Petioles unconnected by a transverse membrane. *Cyme* terminal and in the upper axils, small, *minutely puberulent*, sometimes paniculate, shorter than the leaves, several-flowered. Bracts linear. Flower-buds a line or a line and a half in length, short-pedicelled. *Calyx* turbinate; the limb with 4 very *short and obtuse callous teeth*, and destitute of exterior appendages. *Petals* 4, *ovate and acute* in the bud. Stamens 8: *anthers* received in æstivation into as many narrow canals left between the calyx and the wall of the ovary, oblong, with the connective produced posteriorly into a short and thick tubercle, almost spur-like, apparently *all similar* and equally polliniferous; but they have been examined only in young buds. Style filiform, short: stigma minute, punctiform. Ovary four-celled, with thick and multiovulate placentæ, affixed to the middle of the columella. Fruit not seen.

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* A slight change in the privative may render Blume's name, *Aplectrum*, sufficiently different from the earlier *Aplectrum* of Nuttall, which is apparently a good genus, of *Orchidaceæ*, allied to *Corallorhiza*.

M. Naudin, who has obligingly examined the incomplete specimens of the collection, inclines to refer the plant to Blume's genus *Aplectrum;* notwithstanding that the anthers are probably all similar and perfect, and the calyx is not adnate to the whole surface of the ovary.

13. MEDINILLA, *Gaud.*

1. Medinilla heterophylla, Sp. Nov. (Tab. 75.)

M. alte scandens; ramis teretibus ad nodos sæpius radiciferis; foliis cujusque jugi valde disparibus quintuplinerviis, majore ovato seu ovato-oblongo subcordato subacuminato, petiolo ejus folium alterum cordato-rotundum adæquante vel superante; racemis paniculatis elongatis; bracteis verticillatis bracteolisque obovatis magnis petaloideis albis; floribus tetrameris; calycis limbo fere integerrimo; antheris basi breviter tricalcaratis.

Hab. Feejee Islands; in forests of Ovolau.

Stem shrubby, thick, *climbing over tall trees;* the *branches terete,* slender, commonly *rooting copiously at the nodes*, nearly glabrous, as is the whole plant. *Leaves exceedingly unequal and dissimilar,* one of each pair usually almost abortive; the *larger one ovate or ovate-oblong,* subcordate, acute or *slightly acuminate, quintuple-ribbed* or almost five-ribbed, besides an obscure pair of intramarginal nerves, from 2½ to 4½ inches long, and with its slender petiole half an inch to an inch long: the *smaller leaf is rounded-cordate,* short-petioled or subsessile, either acutish, obtuse, or emarginate, 3–5-ribbed, from 3 to 9 lines in diameter, shorter than or *barely equalling the petiole of the larger* *leaf.* In consistence the leaves appear to have been a little fleshy, but thin. The inflorescence is developed from the leafless nodes of older branches, in the form of an *ample panicle*, composed of drooping *elongated racemes*, which attain the length of a foot or more; their closely approximate nodes each adorned with a pair, or more commonly a *whorl of* 3 *or* 4 *obovate and petaloid* (*white*) *bracts*. These are sessile, and persistent for some time after flowering on the nodose rhachis, half an inch long, about the length of the pedicels; which are not articulated in the middle. Flower subtended by a pair or whorl of *bractlets resembling the bracts*, but smaller and rounder, about the length of the calyx and embracing it. *Calyx* nearly 3 lines long, tinged with violet-colour, urceolate, the tube somewhat quadrangular; the *limb* membranaceous, with a truncate, *entire*, at length repandly sinuate or obscurely four-lobed margin, externally marked with 4 small callosities. Petals 4, nearly 3 lines long, obovate-cuneiform, somewhat inæquilateral, retuse, and with a minute glandular tip, rose-colour. Stamens 8, equal: filaments slender: *anthers* subulate, rose-coloured, *minutely three-spurred at the base;* that is, the connective bearing 2 (yellow) assurgent spur-like processes anteriorly, and one posteriorly, which is similar but decurved. Style filiform; stigma minute, punctiform. Ovary wholly adherent to the calyx-tube, surmounted by a cup-shaped membranous disk, which surrounds the base of the style, four-celled; the thick axile placentæ covered with innumerable ovules. Berry globular-ovoid, a quarter of an inch in diameter, many-seeded, purple? Seeds semi-obovoid, with the inner face concave, or helmet-shaped; the rhaphe large and projecting. Embryo somewhat oblique.

A striking and very distinct species, remarkable as well for its long racemes, conspicuously adorned with white bracts, as for the great inequality of the leaves. Its inflorescence would seem to resemble that of *Dactyliota*, Blume; a genus which perhaps should be reunited to *Medinilla*.

PLATE 75.—MEDINILLA HETEROPHYLLA: a branch, of the natural size. Fig. 1. A flower, with its bractlets. 2. Vertical section of an unexpanded flower. 3. Calyx. 4. A petal. 5, 6. Stamens. 7. A fruit. 8. Transverse section of the same. 9, 10. Seeds. 11. Vertical section of a seed.—The details magnified.

2. MEDINILLA RHODOCHLÆNA, Sp. Nov.

M. subscandens; ramulis teretibus hinc inde radicantibus; foliis cujusque jugi inæqualibus homomorphis ovato-oblongis acuminatis quintuplinerviis basi sæpe obliquis acutis vel obtusis petiolatis puberulis; racemis axillaribus; bracteis bracteolisque dilatatis rubris.

HAB. Feejee Islands; on the mountains of Ovolau, at the altitude of 2,000 feet.

Of this the collection comprises only one or two very incomplete, fruiting specimens, with the vestiges of the inflorescence and bracts; which appear to belong to a species mentioned in Dr. Pickering's notes (in connexion with the foregoing), as a "half-climbing plant, with a weak stem, 20 or 30 feet long; and with red bracts." The *branchlets* are *terete*, thickened at the nodes, some of which bear rootlets, their young summits ferrugineous-pubescent. *Leaves of each pair unequal* in size, but otherwise nearly *similar*, the larger 3 or 4, the smaller one or 2 inches long, *ovate-oblong* with an *acute and often oblique, sometimes obtuse base*, the apex usually *acuminate, quintuple-ribbed, puberulent*, especially beneath, with rusty scurf, thickish in texture; the sparse transverse veins rather conspicuous. Petioles 4 to 8 lines long. *Racemes axillary*, perhaps paniculate, apparently shorter than the leaves. *Bracts and bractlets* opposite or ternate, apparently oval or rounded and longer than the pedicels, petaloid, "*red*." Berry many-seeded. Seeds somewhat helmet-shaped, excavated on the ventral face; the smooth testa minutely punctate.

14. DISSOCHÆTA, *Blume.*

1. DISSOCHÆTA CUMINGII, *Naudin?*

Dissochæta Cumingii, Naudin, in Ann. Sci. Nat. ser. 3, 15, p. 75?

HAB. Luzon; in the mountains, near Baños. (Without flowers or fruit.)

15. SPENNERA, *Mart.*

1. SPENNERA PALUDOSA, *Mart.*, *DC.*

HAB. Rio Janeiro and Organ Mountains, Brazil: very common.

16. TETRAMERIS, *Naudin.*

1. TETRAMERIS MARTIANA, *Naudin.*

Tetrameris Martiana, Naudin, in Ann. Sci. Nat. l. c. 14, p. 121.
Arthostemma Martiusianum, DC. Prodr. 3, p. 137.

HAB. Brazil; in the Organ Mountains.

17. MELASTOMA, *Burm.*

1. MELASTOMA TAITENSE, *DC.*

Melastoma Taitense, DC. Prodr. 3, p. 144; Guill. Zeph. Tait. p. 60; Naudin, in Ann. Sci. Nat. ser. 3, 13, p. 275.
M. Malabathrica, Forst. Prodr. Fl. Ins. Austr. p. 33, & descr. in Guill. Zeph. Tait. l. c.

HAB. Tahiti, Society Islands; on dry ridges.

"Flowers white;" as is also said to be the case by Forster.

2. MELASTOMA VITIENSE, *Naudin*, *l. c.*

HAB. Feejee Islands; Malolo, Ovolau, &c.; both near the coast and on mountains. Samoan Islands; Savaii and Tutuila.

The Feejee specimens are mostly smaller-leaved than those characterized by Naudin: the Samoan form is intermediate, as to the calyx, &c., between the former and *M. Taitense;* to which both are probably to be referred as mere varieties.

3. MELASTOMA POLYANTHUM, *Blume?*

HAB. Ovolau, Feejee Islands, near the coast.

The specimen is insufficient for determination. The leaves are strigose above, but softly appressed-pubescent underneath. The calyx-teeth are narrow, acute, and as long as the tube.

4. MELASTOMA FASCICULARE, *Naudin? l. c.*

HAB. Luzon, Philippine Islands, near Manilla. (Specimen too imperfect for satisfactory determination.)

5. MELASTOMA ADPRESSUM, *Wall. Cat.*

Melastoma longifolium, Naudin, in Ann. Sci. Nat. l. c. p. 293, ex char.

HAB. Singapore; near the town.

18. PLEROMA, *Don.*

PLEROMA, Don, in Mem. Wern. Soc. 4, p. 293; DC. Prodr. 3, p. 151, excl. spp. prior.; Benth. in Hook. Jour. Bot. 1, p. 171, & 2, p. 288 (1840); Gardner, in Hook. Lond. Jour. Bot. 2, p. 348; Lindl.

LASIANDRA, DC. Prodr. 3, p. 127; Mart. & Zucc. Nov. Gen. & Spec. 3, p. 93; Naudin, in Ann. Sci. Nat. ser. 3, 13, p. 127.

It is a pity that Naudin, in his excellent elaboration of *Melastomaceæ,* should have employed the name of *Lasiandra* for this genus; since that of *Pleroma* has not only the absolute priority in publication, but was also adopted for the genus by Bentham (ten years before Naudin's papers appeared), on the occasion of his showing the identity of the two genera; and in this he has been followed by Gardner, Lindley, &c. Irrespective of the rule of priority even, Don's name is the more appropriate; since, being nearly unmeaning, it is unobjectionable; while that of *Lasiandra* is descriptive of only a portion of the species.

1. Pleroma Fontanesianum, *Gardner*.

Pleroma Fontanesianum, Gardner, in Hook. Lond. Jour. Bot. 1, p. 171.
Lasiandra Fontanesiana, DC. Prodr. 3, p. 130; Naudin, l. c. p. 150.
Rhexia Fontanesii & R. Langsdorfiana, Bonpl. Rhex. t. 51 & 56.

Hab. Rio Janeiro, and in the Organ Mountains, Brazil.

2. Pleroma argenteum.

Lasiandra argentea, DC. Prodr. 3, p. 131; Naudin, l. c. p. 143.

Hab. Near Rio Janeiro, and in the Organ Mountains, Brazil.

3. Pleroma adenostemon.

Lasiandra adenostemon, DC. Prodr. 3, p. 130; Naudin, l. c. p. 139.

Hab. Organ Mountains, Brazil.

4. Pleroma spoliatum.

Lasiandra spoliata (& *L. phalacrostemon*), Naudin, in Ann. Sci. Nat. l. c. p. 137.

Hab. Organ Mountains, Brazil.

5. Pleroma Gaudichaudianum.

Lasiandra Gaudichaudiana, DC. Prodr. 3, p. 127; Naudin, l. c. p. 136.

Hab. Near Rio Janeiro, Brazil.

6. PLEROMA KUNTHIANUM, *Gardner*, var.

Pleroma Kunthianum, Gardner, in Lond. Jour. Bot. 2, p. 351; Paxt. Mag. Bot. t. 125.
Lasiandra Kunthiana, DC. Prodr. 3, p. 128?

HAB. Organ Mountains, Brazil.

7. PLEROMA GRACILE.

Rhexia gracilis, Kunth, in Bonpl. Rhex. t. 52.
Chætogastra gracilis & *C. fraterna*, DC. Prodr. 3, p. 133.
Lasiandra gracilis, Naudin, in Ann. Sci. Nat. l. c. p. 128.

HAB. Organ Mountains, and near Rio Janeiro, Brazil.

19. RHYNCHANTHERA, *DC.*

1. RHYNCHANTHERA SCHRANKIANA, *DC.*

Rhynchanthera Schrankiana (cum R. dichotoma & pentanthera), DC. Prodr. 3, Naudin, l. c. 12, p. 214.

HAB. Organ Mountains, Brazil.

There remains in the collection the undeterminable foliage of several *Melastomaceæ* from the Philippine Islands, of one from the Samoan, and one from the Feejee Islands.

ORD. LYTHRACEÆ.

1. PEMPHIS, *Forst.*

1. PEMPHIS ACIDULA, *Forst.*

Pemphis acidula, Forst. Char. Gen. t. 34; DC. Prodr. 3, p. 89.
Lythrum Pemphis, Linn. f. Suppl. p. 249; Forst. Prodr. p. 36; Lam. Ill. t. 408.

HAB. Sooloo Islands; Wake Island, Raraka, Bellinghausen, and small coral islands generally.

2. AMMANNIA, *Linn.*

1. AMMANNIA LATIFOLIA, *Linn.*

Ammannia latifolia, Linn. Spec. Pl. ed. 1, p. 119; Lam. Ill. t. 77; Torr. & Gray, Fl. N. Amer. 1, p. 480.

HAB. Peru; in the bed of the river at Callao.

3. LYTHRUM, *Linn.*

1. LYTHRUM SALICARIA, *Linn.*

HAB. Woolongong, New South Wales. Indigenous?

2. Lythrum Hyssopifolia, *Linn.*

Hab. New South Wales, near Sydney. Chili, near Valparaiso. Introduced from Europe?

3. Lythrum maritimum, *H. B. K.*

Hab. Peru: in the river-bed at Callao and Lima. Sandwich Islands; on the coast of Oahu, near Honolulu, and Hawaii, in the district of Waimea.

4. CUPHEA, *Jacq.*

1. Cuphea Balsamona, *Cham. & Schlecht.*

Cuphea Balsamona, Cham. & Schlecht. in Linnæa, 2, p. 368.

Hab. Brazil, near Rio Janeiro, and in the Organ Mountains. (With a hispid variety.)

2. Cuphea ingrata, *Cham. & Schlecht. l. c.*

Hab. Organ Mountains, Brazil. (The var. *C. Bonariensis*, Gillies.)

3. Cuphea ligustrina, *Cham. & Schlecht. l. c.*

Hab. Brazil; with the preceding.

4. Cuphea flava, *Spreng., DC.*

Hab. Vicinity of Rio Janeiro, Brazil.

ORD. RHIZOPHORACEÆ.

SUBORD. I. LEGNOTIDEÆ.

1. GYNOTROCHES, *Blume.*

GYNOTROCHES, Blume, Bijdr. p. 218, & Mus. Bot. Lugd.-Bat. p. 126.
DRYPTOPETALUM, Arn. in Ann. Nat. Hist. 1, p. 372.

1. GYNOTROCHES RETICULATA, Sp. Nov.

G. ramulis novellis stipulisque pube minutissima cinereis; foliis oblongis acumine brevi obtusissimo terminatis utrinque reticulatis, venis prominulis scabriusculis; pedicellis petiolum adæquantibus; stigmate brevissime tri–quadriradiato.

HAB. Singapore.

This is the same as No. 8457 of Wallich's Catalogue, from Penang and Singapore, and is perhaps not specifically distinct from *G. Dryptopetalum*, Blume (*Dryptopetalum coriaceum*, Arn.), of which I have only an imperfect specimen from Griffith's Malacca collection for comparison. But in our plant the *young branches, stipules, &c.*, are *minutely cinereous-puberulent; the oblong leaves* have a shorter and *very blunt acumination*, are more *reticulated on both sides*, duller, and with the *prominent veins and veinlets scabrous* to the touch; the *pedicels* (about 3 lines long, very numerous in a dense fascicle) *as long as the petiole.* The style, moreover, is terminated by a depressed *slightly four-lobed, or sometimes three-lobed stigma;* the lobes extremely short and obtuse. The petals are wanting in the specimen. Persistent stamens 8: filaments subulate-filiform. Ovary, &c., apparently as in Blume's figure of *G. axillaris.*

2. HAPLOPETALON, Nov. Gen.

Calyx profunde quadrifidus; lobis triangulatis æstivatione valvatis. Petala 4, obovata, calyce inserta, fere exunguiculata, integerrima, carinata, æstivatione involuta, decidua. Stamina 16–20, brevissima, uniserialia, margini disci perigyni tenuis inserta: antheræ ovales, introrsæ, biloculares, longitudinaliter dehiscentes, filamentis subulatis æquilongæ. Stylus brevis, apice quadrifidus, raro quinquefidus; lobis linearibus demum patentibus apice stigmatosis. Ovarium depressum, calycis tubo (mediante disci) semiadnatum, uniloculare. Ovula 8, raro 10, anatropa, e columna centrali geminatim appensa. Frutex Vitiensis; foliis Caralliæ; *stipulis interpetiolaribus caducis; pedicellis in axillis laxe fasciculatis.*

1. HAPLOPETALON RICHII, Sp. Nov. (Tab. 76.)

HAB. Feejee Islands: at Sandalwood Bay, Vanua-levu.

Shrub (or small tree, the height not recorded) glabrous, except the young shoots; which are hirsute with a fine, rusty, deciduous pubescence. Leaves opposite, chartaceo-coriaceous, somewhat shining, oblong or obovate-elliptical, obscurely serrulate above the middle, obtusely acuminate or obtuse, tapering at the base into a petiole (of 4 to 6 lines in length), pinnately-veined and irregularly reticulated, very obscurely pellucid-punctate, from 2½ to 5 inches long, and one or 2 inches wide. *Stipules interpetiolar,* like those of the family, convolute in vernation, fuscous, half an inch long, *caducous.* Flowers in simple and sessile *axillary fascicles,* which are at first enclosed by an involucre of two or three fuscous, early caducous scales. *Pedicels* lax, 7–10 in a cluster, about 2 lines long, not articulated in the middle. Flower-buds naked, a line or a line and a half in diameter, globose–four-angled. *Calyx deeply four-cleft; the lobes* thickish, broadly *triangular*, minutely pubescent at the very tip, otherwise glabrous, *valvate in æstivation*. *Petals* 4, *involute in æstivation*, *obovate*, or somewhat cuneate, *scarcely if at all unguiculate*, retuse at the apex, thickish in texture, *entire*, *carinate*, and externally pubescent on the keel, not longer than the lobes of the calyx, and inserted in their sinuses under the thin edge of the perigynous disk, *deciduous*. *Stamens* 16 to 20, shorter than the petals, *uniserial*, *inserted on the thin and slightly free margin of the perigynous disk* that lines the tube of the calyx, so as to appear somewhat monadelphous: *filaments very short*, *subulate*, inflexed in æstivation; the alternate ones a little shorter than the others: *anthers oval*, somewhat didymous, fixed near their base, *introrse*, *two-celled*, the cells *longitudinally dehiscent*. *Style short*, as long as the stamens, somewhat four-grooved, *four-cleft* or *rarely five-cleft at the apex; the lobes linear*, flattish, obtuse, cruciately *spreading in anthesis*, stigmatose and a little thickened at the apex. *Ovary depressed*, its free summit pubescent, four-rayed, entirely destitute of any epigynous disk or ring, the *lower* part adnate to the flattened base of the calyx (when fructified probably becoming wholly or nearly superior), *one-celled*, apparently without even a trace of rudimentary partitions. *Ovules* 8, *or rarely* 10, *anatropous*, radiately *attached in pairs to a central columella* which reaches to the base of the style; their rhaphes opposite, at length becoming pendulous. Fruit not seen.

This plant, of which the fruit is still a desideratum, is manifestly related to *Gynotroches* and *Cassipourea*, and still more to *Carallia*, one species of which has a half free ovary, and two have merely crenulate petals. The tetramerous flowers, with short stamens, of more than twice the number of the perfectly entire and fleshy petals, along with the difference in the inflorescence, may, with our present knowledge, be held to constitute a sufficient generic distinction. The name which I have chosen, in reference to its entire petals, indicates an obvious difference between it and all its allies.

A memorandum attached to the specimens had apprised me that Mr. Rich, the Botanist of the Expedition, regarding this as a new genus, had assigned to it the name of *Agatea*, in compliment to the late Mr. Agate, the Botanical draughtsman of the Expedition. A former but too hasty examination having led me to refer this plant to an old genus of *Legnotideæ* (which must be my apology for the seeming neglect of a manuscript name), I dedicated a genus of *Violaceæ* (p. 89) to the memory of Mr. Agate, which unfortunately is already published. This is the less to be regretted, however, since the present genus is not so strongly marked in its characters as is desirable for this purpose, and it may not improbably be merged in *Carallia*.

PLATE 76.—HAPLOPETALON RICHII: a flowering branch, of the natural size. Fig. 1. Stipules. 2. Diagram of the flower. 3. A flower-bud. 4. Vertical section of the same. 5. An expanded flower. 6. Vertical section of the same. 7. Stamens, with a portion of the disk. 8. A pair of ovules.—The details variously magnified.

3. CROSSOSTYLIS, *Forst.*

Calyx profunde quadrifidus, quadrangularis; lobis triangulatis æstivatione valvatis. Petala 4, calyce inserta, ligulata, unguiculata, apice truncato tri–quinquedentata, carinata, æstivatione involuta, decidua. Stamina fertilia circiter 20, *margini libera disci perigyni inserta: filamenta elongata, subulato-filiformia, basi dilatata subconnata intus glandula subglobosa instructa: antheræ ovoideæ, introrsæ, biloculares. longitudinaliter dehiscentes. Filamenta sterilia circ.* 20, *fertilibus alterna, iisdem dimidio breviora, subulato-linearia, villosissima. Stylus filiformis, elongatus, apice radiato–*12*-fidus; lobis filiformibus apice stigmatosis in phalanges* 4 *basi plus minus coadunatis. Ovarium depressum, calycis tubo semiadnatum, vertice libero demum convexum* 12*-radiatum,* 12*-loculare. Ovula in loculis gemina, anatropa, e columna centrali appensa.* (*Bacca hemisphærica, multistriata, supera, uniloculeris, polysperma,* ex Forst.)—*Arbuscula glabra; foliis oppositis obovatis integerrimis vel subserrulatis; stipulis interpetiolaribus caducis; pedunculis axillaribus brevibus apice bi–trifloris rariusve quadrifloris; floribus pedicellatis.*

1. CROSSOSTYLIS BIFLORA, *Forst.* (Tab. 77.)

Crossostylis biflora, Forst. Char. Gen. p. 87, t. 44, Prodr. p. 49, & Ms. ed. in Guill. Zeph. Tait. p. 60.

HAB. Mountains of Tutuila, one of the Samoan or Navigators' Islands.

A *small tree, glabrous* throughout, with stout, terete, nodose branches. *Leaves opposite, obovate,* 4 to 7 inches long, and 2 or 3 wide, obtuse or slightly acuminate, cuneate or contracted at the base into a petiole about half an inch in length, loosely feather-veined, and with the veinlets reticulated, chartaceous in texture, somewhat shining, of the same hue both sides, very thickly and obscurely pellucid-punctate by transmitted light. *Stipules interpetiolar,* convolute, fuscous, *caducous,* resembling those of the *Legnotideæ* generally. *Peduncles axillary,* solitary, shorter than the petioles (3 or 4 lines long), naked, bearing 2 *or* 3, *rarely* 4, *one-flowered* (or occasionally three-flowered) *pedicels* articulated with their apex and of about the same length, subtended by small caducous bracts? Flower 4 or 5 lines long when developed, nodding. *Calyx quadrangular,* fleshy, *deeply four-cleft;* the very short tube somewhat turbinate, the broadly *triangular lobes valvate in æstivation,* glabrous, persistent. *Petals* 4, *inserted on* the throat of *the calyx* just within the sinuses, longer than its lobes, oblong or at length *ligulate, tapering gradually* into a claw, 3 lines long, minutely and softly pubescent externally, except the thin margins, glabrous inside, *carinate* ("white," Forster), *truncate at the apex,* where it is erosely *three–five-toothed,* with the teeth subulate and unequal, the middle one usually longer and setaceous, *in æstivation involute* or almost conduplicate. *Stamens usually* 20, inserted on the *slightly free margin of a fleshy perigynous disk* which lines the tube of the calyx: *filaments slender,* as long as the petals, *filiform from a subulate and dilated base,* where they are *slightly concreted* into a ring, along *with as many alternate sterile filaments;* the latter *subulate-linear,* flat, and somewhat petaloid, nearly naked below, above *very hirsute-villous,* especially on the inner face, nearly as long as the calyx-lobes, about *half the length of the antheriferous filaments,* which .are glabrous, and each furnished with a large and conspicuous, glabrous, *globular gland at its base inside. Anthers ovoid, introrse, two-celled,* the cells opening longitudinally. *Style slender,* as long as the stamens, *filiform,* minutely striate; the apex abruptly cut into a radiated fringe of mostly 12 *short and filiform lobes,* stigmatose at their apex, and more or less manifestly collected or at the base united into 4 phalanges, but by no means to the extent represented in Forster's rude figures. *Ovary strongly depressed, its lower part adnate to the* broad base of the *calyx-tube, the free summit* at first flat, *radiately* 12-*striate, after anthesis becoming convex,* 12-*celled* within, the thin dissepiments apparently evanescent after anthesis. *Ovules* 2 *in each cell,* collaterally *inserted on a central axis or column, anatropous,* at first horizontal, and with the upward growth of the ovary after anthesis becoming pendulous. Fruit not seen in the collection. According to Forster it is a hemispherical, many-striate, superior, one-celled berry, containing several globular seeds.

Our collectors did not meet with *Crossostylis* at the Society Islands, nor indeed has it been detected since the time of Forster. It appears, indeed, from the habitat, cited in Guillemin's Zephyritis Taitensis, that Forster did not collect it on Tahiti; but on the outlying island of *Raiatea.* Our specimens (unfortunately incomplete ones, with only some very young flower-buds and a few detached flowers) all came from Tutuila, one of the Navigators' Islands: but they appear to belong to Forster's species, judging from the detailed description reproduced by Guillemin, above-cited, and from the specimen of Lambert's herbarium, now in that of the British Museum, which, however, consists of the foliage alone. But the toothed apex of the petals is not mentioned by Forster.

Crossostylis has always been one of the "genera incertæ sedis." As such it was placed at the end of his Genera Plantarum by Jussieu, who, however, with prophetic insight arranged it next to *Cassipourea!* and conjectured their affinity with the *Salicarieæ.* DeCandolle appended it, with much doubt, to the *Myrtaceæ,* in which he was followed by Endlicher. I am not aware that any later conjecture has been hazarded in respect to it; except that Dr. Pickering, in his manuscript memoranda, queries whether it may not rather belong to the *Philadelphieæ.* It is now abundantly evident, however, that we have in *Crossostylis* an accession to that small group of genera which Mr. Brown[*] long ago sagaciously appended to the *Rhizophoreæ,* and noted as indicating a passage on the one hand to *Salicareæ,* on the other to *Cunoniaceæ;* and which, adopting the name of *Legnotideæ* from Bartling,[†] Dr. Blume has recently proposed as a separate natural order.[‡]

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[*] Obs. Bot. Congo, p. 18.

[†] Ordines Naturales Plantarum, p. 318.

[‡] Museum Botanicum Lugduno-Batavum, p. 126.—Apparently without valid reasons;

Even the tendency to have lobed, toothed, or setigerous petals, which so generally prevails in *Rhizophoraceæ*, is indicated in the summit of the petals of *Crossostylis*. It should be mentioned that the evident resemblance of *Crossostylis* to the preceding genus had not escaped the notice of Mr. Rich, who, however, was not aware of the relationship of either with the *Rhizophoraceæ*.

PLATE 77.—CROSSOSTYLIS BIFLORA: foliage and inflorescence, with very young flower-buds. Fig. 1. Young flower-bud, enlarged. 2. Flower, of the natural size. 3. The same, enlarged. 4. Vertical section of the same. 5. Interior, and 6, exterior view of a petal, much enlarged. 7. Stamens, with the glands and sterile filaments. 8. Ovary, &c. 9. Transverse section of the ovary. 10. Pistil, after anthesis, the calyx, &c., cut away. 11. Ovary of the same, partly cut away, to show the ovules. 12. Pistil, the ovary vertically divided.—The details magnified.

SUBORD. II. RHIZOPHOREÆ.

4. RHIZOPHORA, *Linn.*

1. RHIZOPHORA MANGLE, *Linn.*

Rhizophora Mangle, Linn.; Jacq. Stirp. Amer. p. 141, t. 89; Gærtn. Fruct. 1, t. 45; Lam. Ill. t. 396; DC. Prodr. 3, p. 32; Blume, Mus. Bot. Lugd.-Bat. p. 132.
Candela Americana, etc., Catesb. Car. 2, p. 63, t. 63.

HAB. Brazil; in salt marshes, near Rio Janeiro. (*Mangrove.*)

2. RHIZOPHORA MUCRONATA, *Lam.*

Rhizophora mucronata, Lam. Dict. 6, p. 189, & Ill. t. 396, f. 2; DC. l. c.; Wight, Ill. Ind. Bot. p. 209, & Ic. t. 238.
R. Candelaria, DC. Prodr. 3, p. 32 (ex parte); Wight & Arn. Prodr. 1, p. 310.

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for the peculiar economy of the germination of the embryo of the Mangroves is a special, maritime, not an ordinal character, and one which in other cases (as in *Aroideæ*) belongs to families which generally have albuminous seeds, as Mr. Brown has remarked.

HAB. Feejee, Tonga, and Samoan or Navigators' Islands: in lagoons, &c. A specimen is also ticketed, "Tahiti," perhaps erroneously: as there is no mention of a Mangrove in Dr. Pickering's memoranda of the plants found at the Society Islands.—The mucro of the leaf is not always present.

5. BRUGUIERA, *Lam.*

1. BRUGUIERA RUMPHII, *Blume.*

Bruguiera Rumphii, Blume, Mus. Bot. Lugd.-Bat. p. 138, ex char.
B. gymnorhiza, Lam. et Auct. ex parte.
Mangium celsum, Rumph. Amb. 3, t. 68, ex Blume.

HAB. Feejee, Tonga, and Samoan Islands: in lagoons, &c., along with Mangroves.

The specimens plainly belong to Blume's *B. Rumphii;* but whether they are sufficiently distinct from *B. gymnorhiza* is not so evident. The fruit is said to be eaten at the Feejee Islands.

ORD COMBRETACEÆ.

1. LUMNITZERA, *Willd.*

1. LUMNITZERA COCCINEA, *Wight & Arn.*

Lumnitzera coccinea, Wight & Arn. Prodr. Fl. Ind. Or. p. 316, adn.
L. purpurea, Presl, Repert. Bot. 1, p. 155.
Laguncularia purpurea (in tab. *coccinea*), Gaud. Bot. Voy. Freyc. p. 481, t. 4.
Pyrranthus littoreus, Jack, Malay. Misc. 2, p. 57; Wall. Cat. no. 4018.

HAB. Feejee Islands; Rewa, Sandalwood Bay, &c.: on the coast among Mangroves. Also Tonga Islands.

2. LAGUNCULARIA, *Gærtn.*

1. LAGUNCULARIA RACEMOSA, *Gærtn.*

HAB. Brazil: in salt marshes near Rio Janeiro.

3. TERMINALIA, *Linn.*

1. TERMINALIA CATAPPA, *Linn.*

HAB. Mangsi Islands, in the Sooloo Sea. Samoan Islands. Feejee and Tonga Islands (principally the var. *subcordata*); planted near dwellings.

2. TERMINALIA MOLUCCANA, *Lam.*

Terminalia Moluccana, Lam. Dict. 1, p. 349? Blume, Bijdr. p. 643; DC. Prodr. 3, p. 11; Presl, Rel. Hænk. 2, p. 21.

HAB. Ovolau and Oneata, Feejee Islands. (In fruit.)

This has entirely glabrous and short-petioled, roundish-obovate leaves, and very turgid fruit; which in one specimen is obtusely angled, in the other, ovoid-globose and not at all angled.

3. TERMINALIA GLABRATA, *Forst.?*

Terminalia glabrata, Forst. Prodr. Fl. Ins. Austr. p. 74, & Ms. descr. in Guill. Zeph. Tait. p. 61?

HAB. Feejee Islands. (Without fruit.)

Perhaps not distinct from the preceding. Forster's characters of the drupe may have been taken from the immature fruit.

From "a small island in the Sooloo Sea" is an imperfect fruiting specimen of a species allied to the above, the immature drupes oblong-ovoid, terete, acute at both ends.

4. TERMINALIA RICHII, Sp. Nov.

T. foliis lanceolato-ellipticis acuminatis basi acutis eglandulosis glabratis; spicis floribusque sericeo-tomentosis; fructu valde immaturo elliptico compresso.

HAB. Samoan or Navigators' Islands: on the coast of Upolu.

This, I presume, cannot be Forster's *T. glabrata* (the leaves of which are said to be sometimes ovate-lanceolate, sometimes obovate); since the common peduncle, *rhachis, and flowers are silky-tomentose,* instead of glabrous. *Leaves lanceolate-elliptical*, 2½ to 3½ inches long, abruptly *acuminate, acute at the base, glandless, glabrate*, when young sparingly and minutely pubescent, especially on the midrib underneath, chartaceous in texture, entire, or repand-undulate, prominently feather-veined, somewhat lucid above: petioles 7 to 9 lines long, glandless. Flowers sessile. The very *immature fruit elliptical, compressed*, apiculate, canescent, half an inch long.

ORD. VOCHYSIACEÆ.

1. VOCHYSIA, *Juss.*

1. VOCHYSIA TUCANORUM, *Mart. & Zucc.*

Vochysia tucanorum, Mart. & Zucc. Nov. Gen. & Spec. Bras. 1, p. 142, t. 85.

HAB. Brazil, near Rio Janeiro; common on the Corcovado.

This is the *V. emarginata* of Pohl; but scarcely of Poiret, whose plant is described as having merely opposite leaves, according to Vahl only two inches in length.

Ord. ONAGRACEÆ.

Subord. I. ŒNOTHEREÆ.

1. JUSSIÆA, *Linn.*

1. Jussiæa Peruviana, *Linn.*

Hab. Peru; abundant in wet grounds from Callao to Yanga.

Flowers in the specimens tetramerous: hence it is *J. macrocarpa*, H. B. K., a species already reduced to *J. Peruviana* by Bentham, in Bot. Sulph. p. 92.

2. Jussiæa pilosa, *H. B. K.*

Jussiæa pilosa, H. B. K. Nov. Gen. & Spec. 6, p. 101, t. 532; DC. Prodr. 3, p. 53.

Hab. Brazil; in the Organ Mountains: also near Rio Janeiro: a smoother form.

3. Jussiæa repens, *Linn.*

Hab. Callao and Lima, Peru. Valparaiso, Chili. In water.

4. Jussiæa erecta, *Linn.*

Hab. Brazil; in the vicinity of Rio Janeiro.

5. JUSSIÆA LONGIFOLIA, *DC.*

Jussiæa longifolia, DC. Pl. Rar. Hort. Genev. 1, p. 12, t. 4, & Prodr. 3, p. 56.

HAB. Brazil; in the vicinity of Rio Janeiro.

6. JUSSIÆA OCTOFILA, *DC.*

Jussiæa octofila, DC. Prodr. 3, p. 57; Benth. Bot. Voy. Sulph. p. 92.

HAB. Peru, near Lima. Also at Callao: a nearly glabrous variety.

The latter variety, in a still more glabrate form, likewise occurs in the Sandwich Islands, at Oahu (but apparently is not in our collection); and Walpers, in Rel. Meyen. p. 326, has referred it to *J. octonervia*, Lam.; but the ovary tapers at the base into a slender pedicel, and is usually bracteolate. Probably the two species may be united.

2. LUDWIGIA, *Linn.*

1. LUDWIGIA JUSSIÆOIDES, *Lam.*

HAB. Caldera, Mindanao, one of the Philippine Islands.

3. ŒNOTHERA, *Linn.*

1. ŒNOTHERA MOLLISSIMA, *Linn.*

Œnothera mollissima, Linn. (Dill. Elth. t. 219, f. 286); DC. Prodr. 3, p. 48.

HAB. Rio Negro, North Patagonia: on sand-hills.

2. ŒNOTHERA ODORATA, *Jacq.*

Œnothera odorata, Jacq. Ic. Rar. 3, t. 456; Bot. Mag. t. 2403; Hook. Exot. Fl. t. 183.
Œ. stricta, Ledeb.; Spach, Monogr. Onogr. p. 23; Gay, Fl. Chil. 2, p. 333.

HAB. Chili; between Valparaiso and Santiago. Peru, near Lima.

3. ŒNOTHERA ALBICANS, *Lam.*

Œnothera albicans, Lam. Dict. 4, p. 552, & Ill. Gen. t. 270, f. 2; Spach, l. c.
Œ. nocturna, Jacq. Ic. Rar. 3, t. 455, ex Spach.
Œ. prostrata, Ruiz & Pav. Fl. Peruv. & Chil. t. 315, ex Spach.

HAB. Peru; on hills not far from Lima (a procumbent form with deeply toothed leaves); and Baños.

4. ŒNOTHERA MULTICAULIS, *Ruiz & Pav.*

Œnothera multicaulis, Ruiz & Pav. Fl. Peruv. & Chil. 3, p. 80, t. 317; DC. Prodr. 3, p. 51.

HAB. Obrajillo, Andes of Peru.

5. ŒNOTHERA ACAULIS, *Cav.*

HAB. Chili, near Valparaiso. (With the caulescent state: *Œ. grandiflora*, Ruiz & Pav.)

6. ŒNOTHERA (GODETIA) TENUIFOLIA, *Cav.*

Œnothera tenuifolia, Cav. Ic. 4, p. 67, t. 397; DC. Prodr. 3, p. 48.
Godetia tenuifolia, Spach, Monogr. Onogr. p. 70.

HAB. Chili; between Valparaiso and Santiago.

4. MONTINIA, *Linn.*

1. Montinia acris, *Linn.*

Hab. Cape of Good Hope, near Cape Town. (With ripe fruit only.)

5. EPILOBIUM, *Linn.*

1. Epilobium parviflorum, *Schreb.*

Hab. Madeira; on the southern coast.

2. Epilobium tetragonum, *Linn.*

Hab. Madeira, west of Funchal. Orange Harbour, Fuegia: the var. *Antarcticum*, Hook. f. Andes of Chili (*E. pedicellare*, Presl?). Andes of Peru, between Baños and Culnai: along water-courses; nearly *E. Bonplandianum*, H. B. K.

For an enlarged view of the varying forms and world-wide distribution of this species, see Dr. Hooker's remarks in the Flora Antarctica, p. 270.

3. Epilobium nivale, *Meyen.*

Epilobium nivale, Meyen, Riese, 1, p. 315; Walp. Rel. Meyen. p. 327.

Hab. High Andes of Peru, at Casa Cancha, &c.: procumbent in broad tufts, in the clefts of rocks.

This accords with the character of *E. nivale*, which, however, Meyen collected on the high Andes of Chili. It is suffruticulose, and more leafy than *E. alpinum;* the fleshy leaves when dry of a dark colour; and the flowers are pedicellate.

4. Epilobium nummulariæfolium, *A. Cunn.*

Epilobium nummulariæfolium, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 31; Hook. f. Fl. N. Zeal. p. 57.
E. pedunculare & *E. nerteroides*, A. Cunn. l. c.

Hab. Bay of Islands, New Zealand.

5. Epilobium microphyllum, *A. Rich.*

Epilobium microphyllum, A. Rich. Fl. N. Zel. p. 325, t. 36; A. Cunn. l. c.; Hook. f. l. c.

Hab. Bay of Islands, New Zealand.

6. Epilobium alsinoides, *A. Cunn.*

Epilobium alsinoides, thymifolium, & atriplicifolium, A. Cunn. l. c. ex Hook. f. l. c.

Hab. Bay of Islands, New Zealand:—the form called *E. atriplicifolium* by Cunningham.

7. Epilobium glabellum, *Forst.*

Epilobium glabellum, Forst. Prodr. Fl. Ins. Austr. p. 27; A. Rich. l. c.; Hook. f. l. c.

Hab. Bay of Islands, New Zealand.

8. Epilobium pubens, *A. Rich.*

Epilobium pubens, A. Rich. Fl. N. Zel. p. 329, t. 36, f. 1; A. Cunn. l. c.; Hook. f. Fl. N. Zeal. p. 58.

Hab. In the neighbourhood of the Bay of Islands, New Zealand.

9. Epilobium pallidiflorum, *Solander*.

Epilobium pallidiflorum, Solander, ex A. Cunn. l. c. p. 34; Hook. f. Fl. N. Zeal. p. 59.
E. micranthum, Hook. f. in Hook. Ic. Pl. t. 297.

Hab. Bay of Islands, New Zealand.

10. Epilobium junceum, *Solander*.

Epilobium junceum, Solander, in Forst. Prodr. p. 90; A Cunn. l. c.; Hook. f. l. c.
E. cinereum, A. Rich. Fl. N. Zel. p. 320; A. Cunn. l. c.
E. incanum, hirtigerum, & virgatum, A. Cunn. l. c. fide Hook. f.

Hab. Bay of Islands, New Zealand. Hunter's River, New South Wales.

11. Epilobium Billardierianum, *Seringe*.

Epilobium Billardierianum, Seringe, in DC. Prodr. 3, p. 41.
E. Billardieri, Hook. f. Fl. N. Zeal. p. 61.

Hab. Hunter's River, New South Wales.

6. FUCHSIA, *Plumier*.

1. Fuchsia integrifolia, *Camb.*

Fuchsia integrifolia, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 273; Hook. Bot. Mag. t. 3948.

Hab. Brazil, in the Organ Mountains.

2. Fuchsia affinis, *Camb. l. c.*

Hab. With the preceding; of which it is probably only a variety.

3. Fuchsia coccinea, *Ait.*, var. macrostema.

Hab. Chili: in ravines above Valparaiso:—the var. *macrostema*, Hook. f. (Specimens of the typical form of this well-known *Fuchsia* were gathered at Madeira, from a cultivated plant.)

4. Fuchsia lycioides, *Andr.*

Fuchsia lycioides, Andr. Bot. Rep. t. 120; Sims, Bot. Mag. t. 1024.
F. rosea, Ruiz & Pav. Fl. Peruv. & Chil. 3, p. 88.

Hab. Chili: on dry hills above Valparaiso.

5. Fuchsia excorticata, *Linn. f.*

Fuchsia excorticata, Linn. f. Suppl. p. 217; Lindl. Bot. Reg. t. 957; DC. Prodr. 3, p. 39; Hook. f. Fl. N. Zeal. p. 56.
Skinnera excorticata, Forst. Prodr. Fl. Ins. Austr. p. 27.

Hab. Bay of Islands, New Zealand. (Without either flowers or fruit.)

Subord. II. HALORAGEÆ.

7. HALORAGIS, *Forst.*

Haloragis, Forst. Char. Gen. t. 31; R. Br. in Flinders' Voy. App. p. 550; Endl. Atakt. t. 15, & Gen. Pl. no. 6133; Hook. f. Fl. N. Zeal. p. 63.
Cercodia, Murr. in Comm. Gœtt. 3, t. 1; Gærtn. Fruct. 1, p. 164, t. 32, & Auct.
Goniocarpus, Kœnig, in Ann. Bot. 1, p. 546, & Auct.
Gonocarpus, Thunb. Fl. Japon. p. 5, t. 15; Gærtn. Fruct. t. 225.

1. Haloragis alata, *Jacq.*

Haloragis alata, Jacq. Ic. Rar. 1, t. 69; Hook. f. Fl. N. Zeal. p. 62.
H. Tetragonia, L'Her. Stirp. Nov. 1, p. 82.
H. Cercodia, Ait. Hort. Kew. 2, p. 37.
Cercodea erecta, Murr. l. c.; DC. Prodr. 3, p. 67; A. Rich. Fl. N. Zel. p. 324.
C. erecta & C. alternifolia, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 29.

Hab. Bay of Islands, New Zealand.

This species is also found at Juan Fernandez; and has therefore a geographical range which is surpassed only by *H. micrantha*.

2. Haloragis Serra, *Brongn.*

Haloragis Serra, Brongn. in Bot. Voy. Duperr. t. 699, sine descr.

Hab. New South Wales; on Hunter's River.

Our specimen, although too young to show the fruit, well accords with Brongniart's figure above-cited (of which no character is yet published); but the teeth of the leaves are still sharper and longer.

3. Haloragis teucroides.

Goniocarpus teucroides, DC. Prodr. 3, p. 66.
Haloragis alata, Hook. f. in Lond. Jour. Bot. 6, p. 475? non A. Cunn.

Hab. New South Wales; in the vicinity of Sydney and Cook's River.

4. Haloragis tetragyna, *Hook. f.*

Gonocarpus tetragyna, Labill. Pl. N. Holl. p. 39, t. 53; DC. Prodr. 3, p. 66.
Haloragis (Goniocarpus) tetragyna, Hook. f. Fl. N. Zeal. p. 62.

Hab. Bay of Islands, New Zealand. Sydney, New South Wales.

5. HALORAGIS DEPRESSA, *Walp.*

Haloragis depressa, Walp. Repert. 2, p. 99; Hook. f. Fl. N. Zeal. p. 63.
Goniocarpus depressus, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 30.
G. serpyllifolia, Hook. f. in Hook. Ic. Pl. t. 290.

HAB. Bay of Islands, New Zealand.

6. HALORAGIS MICRANTHA, *R. Br.*

Haloragis micrantha, R. Br. l. c.; Sieb. & Zucc. Fam. Nat. Fl. Jap. (in Abhand. Acad. Monac.), I, p. 25.
Gonocarpus micranthus, Thunb. Fl. Jap. p. 69, t. 15.
Goniocarpus micranthus, Kœnig, Ann. Bot. 1, p. 546, t. 12, f. 5; DC. Prodr. 3, p. 66.
G. microcarpus, Thiband, ex DC. l. c. fide char.
G. citriodorus, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. l. c.
Haloragis tenella, Brongn. Bot. Voy. Duperr. t. 68 (sine descr.); Hook. f. Fl. N. Zeal. p. 63 (non *Goniocarpus tenellus*, DC.).

HAB. New South Wales, near Sydney and Hunter's River.

Dr. Hooker has identified his New Zealand *H. tenella* with the Australian plant figured under that name (not *Goniocarpus tenellus*,[*] as Hooker inadvertently cites it), but not yet described, by Brongniart, and has also detected it on the Khassya Mountains of Eastern India. I am enabled, by the possession of a Japanese specimen, still further to extend this enormous range, and to pronounce it the same as Thunberg's *Gonocarpus micranthus*. Between the Australian and the Japanese plants I cannot find the slightest difference.

7. HALORAGIS ELATA, *A. Cunn.*

Haloragis elata, A. Cunn. ex Fenzl, in Enum. Pl. Hugel. p. 45, adn.

HAB. New South Wales; on Hunter's River.

[*] *Goniocarpus tenellus*, DC. Prodr. l. c. is a very different species, and probably only a variety of *H. tetragyna*.

8. Haloragis pinnatifida, Sp. Nov.

H. caule erecto angulato foliisque pinnatipartitis hirtello-scabridis, segmentis 5–7 angusto-linearibus mucronatis; floribus spicatis folioso-bracteatis polygamo-monoicis, fœminis apetalis; ovario subgloboso scabro.

Hab. New South Wales; on Hunter's River.

Stem erect, a foot high, sparingly branched, angled; the angles *minutely scabrous* with a very short bristly pubescence, otherwise glabrous. *Leaves* opposite and alternate, 1½ to 2 inches, or the rameal half an inch long, *all pinnately parted into 5 or 7 narrowly linear segments*, which are a quarter or half an inch, sometimes even an inch long, *mucronate-pointed*, *scabrous*, especially the edges, with a minute hispidity; the lower pair near the base; the terminal segment usually longer than the others; all about the width of the rhachis (about half a line). *Flowers in terminal*, lax, and somewhat interrupted *spikes*, the lower ones conspicuously *foliose-bracteate* (the bracts resembling the cauline leaves, but reduced in size), *polygamo-monœcious*, subsessile, or the female flowers very short-pedicelled. Male flowers 2 lines long. Petals 4, oblong, complicate-cucullate, twice the length of the lanceolate-triangular lobes of the calyx; the keel not appendaged, minutely hispid-scabrous. Stamens 8. Barren stigmas 4, oblong-conical, naked. *Female flowers* smaller than the male and *apetalous*, occasionally with stamens: the 4 stigmas large, sessile, densely penicillate-hispid, as long as the calyx-lobes. *Ovary* after anthesis *subglobose*, *scabrous*, even, not ribbed, four-celled. Mature fruit not seen.

This needs to be compared with Lindley's *Haloragis aspera*, which is known only by a brief character; and it is apparently still more closely related to *H. heterophylla*, Brongn. That, however, is well distinguished from the present species by the hood-like petals with a hispid-fimbriate keel, and the pedicellate stigmas, as well as by the foliage.

9. HALORAGIS FILIFORMIS, Sp. Nov.

H. scabro-hirtella; caulibus e basi ramosis strictis gracillimis; foliis filiformibus, inferioribus oppositis digitato-tri–quinquesectis, superioribus floralibusque alternis inæqualiter trifidis vel integerrimis; floribus laxe spicatis monoicis, masculis octandris, fœmineis apetalis? ovario subgloboso scabro.

HAB. New South Wales; in the vicinity of Hunter's River.

Stems branched from the base, strict, very slender, terete, and obscurely angled, from a span to near a foot high, very leafy, the younger parts especially *minutely scabrous-hispid. Leaves filiform, scabrous-hispid* like the stems; *the lower opposite,* half or three-quarters of an inch in length, including the undivided base or petiole, which is rather shorter than the 3 to 5 *digitate segments;* the *upper* gradually becoming smaller and *alternate,* and passing into bracts, *variously trifid,* sometimes with the terminal lobe longer, or mostly *entire. Spike* very slender, *loosely flowered. Flowers* barely a line long, subsessile, *monœcious: barren ones octandrous;* the 4 petals oval, complicate-carinate, minutely hispid on the back, barely twice the length of the triangular-lanceolate lobes of the calyx; the stigmas rudimentary: *female flowers apparently apetalous,* with 4 thick and sessile hispid stigmas. *Ovary subglobose, scabrous,* even, four-celled. Mature fruit not seen.

This is abundantly distinct from any species known to me; and evidently is not the *Goniocarpus trifidus* of Nees, which is diœcious and tetrandrous, and with the lower leaves verticillate, &c.

8. MYRIOPHYLLUM, *Vaill.*

1. MYRIOPHYLLUM PROSERPINACOIDES, *Gillies.*

Myriophyllum proserpinacoides, Gillies, in Hook. Bot. Misc. 3, p. 313.

HAB. Chili; near Valparaiso.

2. MYRIOPHYLLUM VERRUCOSUM, *Lindl.*

Myriophyllum verrucosum, Lindl. in Mitch. Jour. Trop. Austral. p. 384.

HAB. Hunter's River, New South Wales. (Submersed stems only, without flowers or fruit.)

9. GUNNERA, *Linn.*

1. GUNNERA CHILENSIS, *Lam.*

Gunnera Chilensis, Lam. Dict. 3, p. 61, & Ill. Gen. t. 801, f. 1; Bennett, Pl. Jav. Rar. p. 75; Hook. f. Fl. Antarc. p. 273; Gay, Fl. Chil. 2, p. 363.
G. scabra, Ruiz & Pav. Fl. Peruv. & Chil. 1, p. 29, t. 44.
Panke, Feuill. Obs. 2, p. 741, t. 30.

HAB. Chili, near Valparaiso; in valleys along the coast.

Without doubt Dr. Hooker has rightly interpreted Mr. Brown's views (to which Mr. Bennett, in his article on *Gunnera*, above-cited, gave no clue), in referring this genus to the *Halorageæ*. His former oversight in respect to the embryo is corrected in Fl. N. Zeal. p. 65: the exception mentioned, that the leaves are alternate in *Gunnera*, may likewise be omitted, since they are alternate in *Proserpinaca*, *Meionectes*, and in some species of *Haloragis* and *Myriophyllum*.

2. GUNNERA PETALOIDEA, *Gaud.* (Tab. 78, 79.)

G. hermaphrodita; foliis reniformi-rotundatis obsolete lobatis margine subdentatis reticulato-rugosis subtus petiolisque hispidulis; spicis subsessilibus elongatis bracteis angustissime linearibus subtensis in rhachin prælongam confertis; petalis cucullatis.

Var. β. KAUAENSE: *fere glabra; bracteis brevibus.*

HAB. Sandwich Islands. (Hawaii? Gaudichaud.) *α*. Maui: on the mountains of the western division of the island, growing on the face of high mural precipices. (In flower and with young fruit.) *β*. Kauai. (Foliage and mature fruit.)

Plant apparently as large and conspicuous in its foliage as *G. Chilensis*, and with much more elongated and lax inflorescence. *Leaves rounded-reniform*, 1½ or 2 feet in diameter when full grown, *obscurely lobed*, and with a more or less toothed margin, pedately ribbed, very veiny and *reticulated*, the reticulations usually more or less bullate or *rugose*, glabrous above, except some minute hairs on the ribs and veins, *beneath hirsute*, especially on the veins and ribs, as is the stout petiole; in the specimen from Kauai, var. *β.*, *nearly glabrous* throughout. The petiole in both forms is roughened with some sparse and inconspicuous muricate points, of which traces are also observed on the principal ribs. Inflorescence (with the short scapoid peduncle) at least 2 or 3 feet long; the *spikes crowded*, but lax and spreading, *subsessile*, 3 to 6 inches long; the main rhachis hirsute, in var. *β.* glabrate or glabrous. *Bracts narrowly linear*, 6 to 9 lines long and barely a line wide; in var. *β.* apparently ovate or oblong, and only 3 or 4 lines long. Flowers sessile, crowded, and somewhat glomerate on the rhachis of the spikes, not bracteolate, glabrous. Tube of the calyx adnate, globular; the lobes 2, anterior and posterior, persistent, broadly ovate-triangular, thick, the thin edge denticulate at the broad or truncate apex. *Petals* 2, cucullate, enclosing the stamens before anthesis, broadly obovate or cuneate, retuse, obscurely glandular on the back, thickish in texture, alternate with the lobes of the calyx, twice or thrice their length, epigynous, tardily deciduous. Stamens 2, epigynous, opposite the petals: filaments very short: anthers large, almost a line long, two-celled, emarginate at each end, somewhat didymous, fixed by the base, introrse, the cells opening longitudinally. Pollen four-lobed, or of 4 united grains. Stigmas 2, opposite the stamens, and nearly twice their length, linear-subulate, hispid, slightly united at the base. Ovary one-celled, with a single anatropous ovule, suspended from the summit of the cell. Drupes ovoid-globose, apparently red or purple, 1½ or 2 lines long, tipped with the short and incurved lobes of the calyx, the tube of which forms the fleshy sarcocarp: putamen small in proportion, acheniform, lenticular, and somewhat quadrangular or trigonous, smooth, crustaceous. Seed conformed to the putamen; the testa very thin and delicate. Embryo minute, near the hilar extremity of the fleshy and oily albumen, cordate, the radicle superior.

The smooth variety, of which we have only a full-grown leaf and mature fruit, requires further investigation; but it will probably prove to be only a form of Gaudichaud's *G. petaloidea*. I am unable to compare the species with the *G. bracteata*, from Juan Fernandez.

Plate 78.—Gunnera petaloidea. Fig. 1. A young leaf. 2. A full-grown leaf. 3. Summit of the inflorescence, in flower. 4. A small portion of the inflorescence, in fruit.—All of the natural size.

Plate 79, *A*.—Fig. 1. Diagram of a flower. 2. A flower, viewed anteriorly. 3. The same, with the petals and stamens removed, and the ovary vertically divided. 4. A petal. 5. A stamen. 6. Pollen. 7. Transverse section of a drupe. 8. Vertical section of a drupe, seed, &c., showing the embryo in place. 9. Putamen, detached. 10. Embryo, detached.—Variously magnified.

3. Gunnera (Misandra) Magellanica, *Lam.*

Gunnera Magellanica, Lam. Dict. 3, p. 61, & Ill. Gen. t. 801, f. 2; Hook. f. Fl. Antarc. p. 274.
G. Falklandica, Hook. Ic. Pl. t. 489.
Misandra Magellanica, Commerson, in Juss. Gen. p. 405; Gaud. Bot. Freyc. Voy. p. 502.

Hab. Orange Harbour, Fuegia; common.

Various forms were collected, both in flower and in fruit, either hairy or almost glabrous; the scapes varying from 3 lines to as many inches in length; the petioles from half an inch to 10 inches long; the blade of the leaves from 8 lines to 4½ inches in diameter.

4. Gunnera (Misandra) lobata, *Hook. f.* (Tab. 79.)

Gunnera (Misandra) lobata, Hook. f. Fl. Antarc. p. 275.
Dysemone lobata, Banks & Solander, Ic. & Ms. in Herb. Banks.

Hab. Fuegia; on mountains at Orange Harbour: somewhat rare.

A small and slender plant; the sterile stems creeping and rooting, glabrous, squamose; the flowering ones shorter and thicker root-stocks; diœcious: the female plant apparently smaller than the males. Petioles 3 to 15 lines long, strigosely hirsute with erect reddish hairs. Leaves orbicular or round-reniform, 3 to 9 lines in diameter, 5–7-lobed, or on sterile shoots crenately 9–13-lobed, subcoriaceous, glabrous, sometimes ciliate, the lobes roundish, entire. Stipular scales ferrugineous. Spikes simple, few-flowered; the male raised on a slender scape of 6 to 18 lines in length; the female short and subsessile. Male flowers 8 to 12, crowded, or at length sparse, obscurely pedicellate or nearly sessile on the rhachis, not bracteate. Calyx of 2 filiform-linear glabrous sepals, placed anterior and posterior, much smaller than the naked anthers, which they at no period enclose, glandular at the tip. Petals none. Stamens 2, alternate with the sepals: anthers broadly oval, somewhat didymous, two-celled, nearly a line long, twice the length of their filaments, turgid, mucronulate, opening longitudinally along the margins. Female flowers 8 or 10, capitate, ebracteate, sessile. Tube of the calyx subglobose, adnate to the ovary; the lobes 2, short and obtuse, oval, often unequal, sometimes lateral as respects the axis of inflorescence, persistent. Petals wanting. Stigmas 2, subulate, elongated, 2 or 3 lines in length, purple, hispid, alternate with the lobes of the calyx, slightly united at the base. Ovary one-celled. Ovule anatropous, suspended. Fruit not seen. (The fruit excepted, our specimens enable me to complete the characters of this rare species of an interesting genus.)

Plate 79, *B.*—Gunnera lobata: male and female plants, and a sterile shoot, of the natural size. Fig. 1. Portion of the male inflorescence, magnified. 2. Female inflorescence, magnified. 3. Flower, from the same, more magnified; the ovary divided transversely. 4. Flower, with the ovary vertically divided.

ORD. LOASACEÆ.

1. MENTZELIA, *Linn.*

1. MENTZELIA SCABRA, *H. B. K.*

Mentzelia scabra, H. B. K. Nov. Gen. & Spec. 6, p. 120; DC. Prodr. 3, p. 343.
M. aspera, Hook. Bot. Misc. 2, p. 220, non Linn.

HAB. Peru; between Caballeros and Obrajillo.

The stamens are about 75 in number; five of them with dilated filaments.

2. LOASA, *Adans.*

1. LOASA INCANA, *Graham.*

Loasa incana, Graham, in Edinb. Phil. Jour. 1830; Hook. Bot. Mag. t. 3048, & Bot. Misc. 2, p. 220.
L. atriplicifolia, Presl, Symb. Bot. 1, p. 61, t. 39.

HAB. Peru; common from Yaso to Baños.

2. LOASA GRANDIFLORA, *Lam.*

Loasa grandiflora, Lam. Dict. 3, p. 580; Juss. in Ann. Mus. 5, p. 26, t. 4, f. 2.

HAB. Andes of Peru, at Baños.

3. Loasa Aldunatea, *Gay.*

Loasa Aldunatea, Gay, Fl. Chil. 2, p. 442.

Hab. Chili; probably in the Andes, above Santiago. (The ticket lost.)

4. Loasa heterophylla, *Hook. & Arn.*

Loasa heterophylla, Hook. & Arn. in Bot. Misc. 3, p. 328; Gay, l. c.

Hab. Chili, near Valparaiso.

5. Loasa pinnatifida, *Gillies.*

Loasa pinnatifida, Gillies, ex Arn. in Edinb. Jour. Geogr. Sci. 1, p. 275; Hook. & Arn. l. c.

Hab. Andes of Chili, above Santiago, near the snow-line.

3. CAIOPHORA, *Presl.*

1. Caiophora coronata, *Hook. & Arn.*

Caiophora coronata, Hook. & Arn. Bot. Misc. 3, p. 327; Gay, Fl. Chil. 2, p. 437.
C. absinthiifolia, Presl, Rel. Hænk. 2, p. 274.
Loasa coronata, Gillies, ex Arn. in Edinb. Jour. Geogr. Sci. 1, p. 273 (1831).

Hab. Andes of Chili, above Santiago.

2. Caiophora carduifolia, *Presl, l. c.*

Hab. Andes of Peru, near Baños, &c. (Also collected by Mathews, M'Lean, &c.)

3. Caiophora contorta, *Presl, l. c.*

Loasa contorta, Lam. Dict. 3, p. 579, & Ill. Gen. t. 426; Juss. in Ann. Mus. 5, t 3, f. 1; DC. Prodr. 3, p. 340; Hook. Bot. Misc. 2, p. 220.

Hab. Andes of Peru, near Obrajillo, &c.

Ord. MALESHERBIACEÆ.

1. MALESHERBIA, *Ruiz & Pav.*

1. Malesherbia thyrsiflora, *Ruiz & Pav.*

Malesherbia thyrsiflora, Ruiz & Pav. Fl. Peruv. & Chil. 3, t. 254; DC. Prodr. 3, p. 338; Hook. Bot. Misc. 2, p. 220.
Gynopleura tubulosa, Cav. Ic. Pl. 4, p. 72, t. 375.

Hab. Peru; from Yaso to Obrajillo.

ORD. TURNERACEÆ.

1. TURNERA, *Plumier.*

1. TURNERA CUNEIFORMIS, *Juss.*

Turnera cuneiformis, Juss. in Poir. Dict. 8, p. 142; DC. Prodr. 3, p. 346; Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 213.

HAB. Brazil; very common around Rio Janeiro. (Scarcely distinct from *T. ulmifolia.*)

2. TURNERA SALICIFOLIA, *Camb.*

Turnera salicifolia, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 227.

HAB. Brazil: in the vicinity of Rio Janeiro; not uncommon in forests.

ORD. PASSIFLORACEÆ.

1. PASSIFLORA, *Linn.*

1. PASSIFLORA (TETRAPATHÆA) TETRANDRA, *Banks & Soland.*

Passiflora tetrandra, Banks & Soland. Ic. ined.; DC. Prodr. 3, p. 323; Hook. f. Fl. N. Zeal. p. 73.
Tetrapathæa australis, Raoul, Pl. N. Zel. p. 27, t. 27.

HAB. Waia-ruru Bay, New Zealand. (In fruit.)

2. PASSIFLORA LITTORALIS, *H. B. K.*

Passiflora littoralis, H. B. K. Nov. Gen. & Spec. 2, p. 138; Hook. Bot. Misc. 2, p. 219.

HAB. Peru, at Callao and Lima.

The glands of the petiole are sessile or nearly so, as noted by Hooker.

3. PASSIFLORA ALBIDA, *Ker.*

Passiflora albida, Ker, Bot. Reg. t. 667; DC. Prodr. 3, p. 328.

HAB. Brazil, near Rio Janeiro.

4. Passiflora elliptica, *Gardn.*

Passiflora elliptica, Gardn. in Hook. Lond. Jour. Bot. 1, p. 173.

Hab. Brazil; on the Corcovado, near Rio Janeiro.

5. Passiflora piligera, *Gardn. l. c.*

Passiflora bilobata, Velloz. Fl. Flum. 9, t. 78, fide Gardn.

Hab. Brazil, near Rio Janeiro.

6. Passiflora fœtida, *Linn.*

Passiflora fœtida, Linn.; Cav. Diss. 10, t. 289; Sims, Bot. Mag. t. 2619.
P. hibiscifolia, Lam. Dict. 5, p. 39; DC. Prodr. 3, p. 331.

Hab. Peru; on the coast, near Callao. Singapore: doubtless introduced from America.

There is also in the collection the foliage of a species of *Passiflora*, to me unknown, gathered near Baños, Luzon, and on an island in the Sooloo Sea.

2. DISEMMA, *Labill.*

1. Disemma Herbertiana, *DC.*

Disemma Herbertiana, DC. Prodr. 3, p. 332.
Passiflora Herbertiana, Ker. Bot. Reg. t. 737.

Hab. New South Wales: probably from the vicinity of Sydney.

3. TACSONIA, *Juss.*

1. Tacsonia trifoliata, *Juss.*

Tacsonia trifoliata, Juss. in Ann. Mus. 6, p. 393; DC. Prodr. 3, p. 334; Hook. Bot. Misc. 2, p. 219.
Passiflora trifoliata, Cav. Ic. Pl. 5, p. 16, t. 427.

Hab. Andes of Peru; between Obrajillo and Culnai; also near Baños.

A species with showy red flowers. Both DeCandolle and Hooker, above cited, have omitted all reference to the figure of Cavanilles.

2. Tacsonia peduncularis, *Juss. l. c.*

Passiflora peduncularis, Cav. Ic. Pl. 5, p. 15, t. 426.

Hab. Andes of Peru, near Baños. (Also gathered by Matthews, M'Lean, &c.)

There is likewise some foliage (without flowers or fruit) of a third species, from the same district, with small and trisected leaves; which I cannot identify. It is apparently allied to a *Tacsonia* in the Peruvian collection of Matthews, of which the characters are subjoined.[*]

[*] Tacsonia gracilens (Sp. Nov.): *glabra; caule gracili; stipulis setaceis; foliis parvis tripartitis trisectisve, segmentis* (6–12 *lin. longis*) *oblongis obtusis penninerviis obsolete serrulatis, serraturis subglandulosis, petiolo versus apicem uni–triglandulosis; involucro e bracteis* 3 *linearibus parvis discretis; floribus* (*pollicaribus*) *solitariis; fructu ovali.*—Huannco, Andes of Peru, Matthews: no. 915, in herb. Hook.—The single flower did not permit me to determine if it presented the structure of the section *Distephana*.

ORD. PAPAYACEÆ.

1. CARICA, *Linn.*

1. CARICA PAPAYA, *Linn.*

HAB. Tahiti; on Point Venus. Cultivated in the Society, as also in the Samoan, Tonga, Feejee, and Sandwich Islands; where the fruit of the *Papau* is a favourite esculent.

2. CARICA CANDICANS, Sp. Nov.

C. caule parce ramoso; foliis ovatis subcordatis integris nunc repandis vel angulato-dentatis e basi trinerviis subtus adpresse cano-tomentosis.

HAB. Peru: in ravines of the Amancaes Mountains, between Lima and Obrajillo.

"Trunk a foot in diameter, 6 to 10 feet high, with a *few coarse branches: leaves entire, white-tomentose beneath.*"—Pickering, Ms. This is very different from any *Carica* published or known in the herbaria I have consulted; unless it should prove to be a state of *C. pyriformis*, Willd. (but not of Hook. & Arn. and Gay), founded on the *Papaya ramosa*, etc. of Feuillée, which he found in a garden at Lima; but which has palmately nine-parted leaves, and there is no mention of pubescence or wool on their lower surface. The *leaves* of our plant are *ovate* or ovate-rotund, with a usually slight *subcordate* base, and an obtuse or pointed apex, the margin entire or merely *repand*, or in a single and oblong leaf *sinuately-dentate* into 3 or 4 coarse teeth on each side; the *base three-ribbed*, sometimes with an additional pair of basal veins; the ribs branching into coarse veins and reticulated veinlets. The younger leaves, of recent branches, are only 1½ or 2 inches long; the largest gathered is 9 inches long; and this equally retains on its lower surface the *soft and fine, appressed, whitish tomentum*, which, however, may be rubbed off; the upper surface glabrous. The male inflorescence consists of small and crowded many-flowered cymes, on peduncles of an inch or two in length: the pedicels scarcely any. Calyx minute, seven-toothed, or sometimes five-toothed. Corolla salver-shaped; the tube half an inch in length; the oblong-linear lobes 3 lines long, varying from 5 to 7 in number. Stamens twice as many as the lobes of the corolla, distinct: anthers linear-oblong; those alternate with the lobes on filaments of about their own length; those opposite them subsessile. Pistil rudimentary. Female flowers not gathered. But there is a loose fructified ovary, an inch and a half long, ovoid, pointed, and with a narrowed base.

ORD. CUCURBITACEÆ.

1. MELOTHRIA, *Linn.*

1. MELOTHRIA FLUMINENSIS, *Gardn.*

Melothria Fluminensis, Gardn. in Hook. Lond. Jour. Bot. 2, p. 173.

HAB. Brazil; common around Rio Janeiro.

2. MELOTHRIA SAMOENSIS, Sp. Nov.

M. glabra; foliis deltoideo-cordatis acuminatis repandis denticulatis; floribus dioicis? in axillis solitariis; pedunculis filiformibus elongatis;

corollæ lobis integerrimis; calycis tubo ultra ovarium fusiforme producto; bacca oblonga.

HAB. Samoan or Navigators' Islands; common on Tutuila and Upolu.

Stem slender, *glabrous*, as is the whole plant, angled, creeping. *Leaves deltoid-cordate*, sometimes with the broad sinus rounded, sometimes approaching to deltoid-hastate, from 2 to 3½ inches long, and 2 or 3 inches broad at the base, *acuminate*, membranaceous, nearly smooth, the margins *denticulate*, towards the base often *repand*, or obscurely angulate-toothed. Petioles about an inch long. Tendrils simple. *Flowers apparently diœcious* (at least the two sexes occupy different branches), "white," *solitary in the axils* of the leaves, on *filiform peduncles*, of which the fertile are an inch or more, the sterile 2 or 3 inches in length. Calyx of the male flowers campanulate, with 5 setaceous teeth at the sinuses of the five-parted *corolla; the divisions* of which are oblong, or two of them lanceolate, 2 or 3 lines long, *perfectly entire*, and glabrous. Stamens 3, shorter than the petals: filaments short, inserted on the tube of the calyx, distinct: anthers two-celled; the cells straight or nearly so, borne on the margin of the dilated, subcuneate-oval, membranaceous connective, the truncate summit of which is slightly and very obtusely apiculate: one of the three stamens has a narrower, barely oblong connective, but is otherwise similar. A short, obscurely three-lobed gland takes the place of the style. *Calyx of the female flowers* 6 or 7 lines long, including the ovary (which is 3 or 4 lines long); the *tube produced beyond the fusiform ovary* into a short and slender beak, which is abruptly dilated into a cylindraceous-campanulate throat; the lobes very minute. Corolla as in the male flower. Style as long as the calyx: stigma dilated, three-lobed. *Berry oblong*, nearly an inch in length, not pointed, many-seeded. Seeds flat, smooth, about 2 lines long.

2. KARIVIA, *Arn.*

KARIVIA, Arn. in Hook. Jour. Bot. 3, p. 275; Wight, Ic. Pl. 2, t. 502.

1. Karivia Samoensis, Sp. Nov.

K. dioica, glabra; cirrhis simplicibus; foliis cordatis acuminatis denticulatis modice petiolatis; floribus masculis umbellatis vel corymbosis e pedunculo brevissimo, fœmineis solitariis ternisve, pedunculo bacca ovoidea polysperma breviore; seminibus lævibus compressis.

Var. β. Vitiensis: *foliis supra scabridis; pedunculis fructiferis brevissimis.*

Hab. Samoan Islands; on Manua and Upolu. Var.? β. Ovolau, Feejee Islands.

A slender, extensively climbing, apparently *diœcious, glabrous* vine, not unlike *K. umbellata*, Arn., in habit, not glaucescent. *Tendrils simple. Leaves cordate*, with rounded lobes and a deep sinus, more or less *acuminate, denticulate*, sometimes a little repand-toothed, membranaceous, smooth both sides, from 2 to 4 inches long, rather conspicuously *petioled:* the petiole of the larger leaves an inch or two in length and exceeding the sinus; those of the smaller upper leaves only half an inch long, and scarcely equalling the sinus. Flowers axillary: only the sterile ones occur in the specimens, and very sparingly. *Male flowers* in small *umbels or corymbs;* the common *peduncle short or wanting;* the pedicels 2 or 3 lines long. Calyx hemispherical or slightly campanulate, with 5 short and subulate teeth. Petals 5, ovate, acute, inserted by a broad base on the summit of the calyx-tube, scarcely exceeding its lobes. Stamens 3, distinct, inserted in the base of the calyx, included: anthers linear-oblong, somewhat sagittate, longer than the filaments, two-celled, similar, or perhaps one of them a little narrower than the others: the cells straight, linear, more or less pubescent at the junction with the narrow connective inside. A short, three-lobed gland takes the place of the gynæcium. Female flowers not seen. *Berry ovoid*, resembling that of a *Melothria*, half an inch long, on a peduncle or 4 or 5, or sometimes only 2 lines long, *many-seeded. Seeds* closely packed in 3 vertical rows, ovate, *compressed*, apparently flat, *smooth and even*, whitish, with an abrupt but not margined edge.

A very imperfect fruiting specimen, from the Feejee Islands, apparently belongs to this species; although the *leaves* are *somewhat scabrous above*, and the *fructiferous peduncles very short.*

There are female specimens apparently of *Karivia umbellata* in the collection, ticketed "Bay of Islands:" but there is probably some mistake about the habitat, as neither Cunningham, Raoul, nor Hooker have noticed the plant in New Zealand.

3. LUFFA, *Cav.*

1. Luffa insularum, Sp. Nov.

L. caule sulcato glabro; foliis rotundis quinquelobatis vel quinquangulatis sinu profundo cordatis margine denticulatis seu repando-dentatis; racemis masculis elongatis; staminibus discretis; calycis lobis fl. fœm. subtus glanduliferis; fructu oblongo lævi haud sulcato bipollicari.

Hab. Samoan or Navigators' Islands; on Savaii and Upolu: climbing trees. Tongatabu, Friendly Islands. Muthuata, Feejee Islands.

This appears to be a truly indigenous and undescribed species, with rounder and less dentate leaves than *L. fœtida* and *L. acutangula*, and a very small and even fruit. It is perhaps diœcious. *Stem* and branches *glabrous*, sometimes scabrous, strongly *grooved*. *Leaves rotund*, sometimes inclining to reniform, 3 to 5 inches in diameter, *deeply cordate with a narrow or closed sinus, five-angled, or* sometimes rather deeply *five-lobed*, scabrous both sides, or sometimes almost smooth; the lobes or angles rounded, or the terminal one occasionally acuminate and a little prolonged, *denticulate, or barely repand-toothed.* Tendrils two-cleft, or sometimes three-cleft. *Male racemes elongated* (a span to a foot long, including the peduncle). Pedicels shorter than the calyx; the lobes of which are ovate-lanceolate and glandless; the petals ("yellow," according to Dr. Pickering's notes, but seeming to have been white) obovate, entire, an inch or more in length. *Stamens* 5, *distinct:* filaments short: anthers sinuous-contorted, with remote convolutions. Female flowers solitary in the axils, short peduncled: the lanceolate-acuminate *calyx-lobes underneath beset with large glands. Fruit oblong*, obtuse at both ends, *smooth, not grooved* nor ribbed, only 2 inches long, with a thin and yellowish rind when dry, sparing fibrose-reticulated within. Seeds oval, compressed, but tumid, brown, with a nearly smooth surface; the edge very slightly margined.

4. TRICHOSANTHES, *Linn., Arn.*

1. Trichosanthes (Involucraria) quinquangulata, Sp. Nov.

T. glabra; foliis (magnis) cordato-rotundis sinu profundo angulato-quinquelobis, lobis acuminatis subintegerrimis; cirrhis quinquefidis; floribus masculis racemosis; bracteis foliaceis magnis obovatis dentatis pedicello gracili brevioribus; calycis segmentis lineari-lanceolatis pinnatifido-laciniatis petala late cuneata longe fimbriata subæquantibus.

Hab. Mangsi Islands, in the Sooloo Sea.

Apparently an extensively climbing vine; with an angled stem, smooth and glabrous, or nearly so, as is the whole plant. *Leaves ample*, 7 to 9 inches in diameter, thin and membranaceous, three-ribbed from the base, the lateral ribs forked, *subrotund, cordate with a deep and narrow sinus, angularly five-lobed; the lobes* broadly triangular, 1½ to 2, or the terminal one 3 inches long, *acuminate, nearly entire*, barely repand, or the basal lobes usually with a few coarse teeth posteriorly. *Tendrils five-cleft*, or four-cleft. *Male* peduncle axillary, longer than the petiole, strongly angled, bearing a many-flowered *raceme;* the flowers subtended, and as it were involucrated, with *large, obovate*, glandless, more or less *toothed, foliaceous bracts*, of half an inch or an inch in length, but *shorter than the slender pedicels* of the developed flowers, which are from an inch to an inch and a half in length. Tube of the (male) calyx clavate-turbinate, half an inch long; its 5 *segments linear-lanceolate*, almost an inch in length, remotely *pinnatifid-laciniate, nearly the length of the* apparently white, *broadly cuneate petals*. These are retuse, with a central apiculation, the broad summit on each side laciniated into a copious, long, and delicate fringe. Filaments 3, short: anthers united into a cylindrical mass. Female flowers and fruit not seen.

This is evidently a congener of *T. palmata*, Roxb., and of *T. tricuspidata*, Lour.; from which the leaves and the long pedicels distinguish it. I cannot identify it with any described species.

5. MOMORDICA, *Linn.*

1. MOMORDICA CHARANTIA, *Linn.*

HAB. Luzon; at Baños, Laguna, &c. Point Venus, Tahiti: doubtless recently introduced.

2. MOMORDICA SENEGALENSIS, *Lam.*

Momordica Senegalensis, Lam. Dict. 4, p. 239; DC. Prodr. 3, p. 311.

HAB. St. Jago, Cape de Verde Islands. Rio Janeiro, Brazil.

6. CUCUMIS, *Linn.*

1. CUCUMIS PUBESCENS, *Willd.*

Cucumis pubescens, Willd. Spec. Pl. 4, p. 614; DC. Prodr. 3, p. 301; Wight & Arn. Prodr. Fl. Ind. Or. 1, p. 342.

Var.? β. *fructu subgloboso mox glabrato* (*vix pollicari*).

Var.? γ. *fructu glaberrimo ovali* (*sesquipollicari*).

Cucumis bicirrha, Forst. Mss. ex Guill. Zeph. Tait. p. 56?

HAB. St. Jago, Cape de Verde Islands: in wild and rocky situations. (Without fruit.) Var.? β. Feejee Islands; on Muthuata, &c. Var.? γ. Tahiti and Matia, Society Islands; and Tongatabu.

I find nothing to distinguish the specimens of the South Sea Islands from *C. pubescens*, except the smooth fruit; which, in the form collected at the Feejee Islands still shows traces of the pubescence that clothes the ovary: the fruit appears to be globular and scarcely an inch in diameter. In the Tahitian form, the fruit is larger, oval, fully an inch and a half long, smooth and even, with no trace of pubescence. The short lobes of the leaves are only minutely denticulate. This would seem to be Forster's *Cucumis bicirrha* (of which no specimens are known to be extant); but the tendrils are all simple.

7. CYCLANTHERA, *Schrad.*

1. CYCLANTHERA MATTHEWSII, *Arn.*

C. subglabra; caule gracillimo; foliis pedatim quinquepartitis seu tripartitis segmentis lateralibus subbilobis, intermedio productiore, omnibus oblongis margine repandis; cirrhis bifidis; racemo masculo gracili simplicissimo; pedunculo floris feminei fructu oblique ovato oligospermo dimidio breviore.

Cyclanthera Matthewsii, Arn. in Hook. Jour. Bot. 3, p. 280, absque char.

HAB. Peru, in the vicinity of Obrajillo.

A *very slender* plant, *glabrous*, or nearly so: with *pedately five-parted leaves, or* sometimes only *three-parted, with the lateral divisions slightly two-lobed* or nearly entire; the *segments oblong*, obtuse or slightly pointed, about an inch long, with *repand* or obscurely crenulate margins; *the middle one longer* than the others. *Tendrils two-cleft*, elongated. *Male flowers in a simple and slender raceme*, about the length of the leaves; the flowers barely a line in diameter, on pedicels half a line long, which are not clustered. *Female flowers* solitary in the same axils with the male flowers, on a peduncle of only a line and a half long. *Fruit obliquely ovate*, 5 or 6 lines long, thickly beset with soft and barbless prickles, about *five-seeded*. Seeds coarsely tuberculate.

8. SICYOS, *Linn.*

§ 1. EUSICYOS.—*Fructus compressus vel turgidus, haud angulatus, setis retrorsum scabris armatus, rariusve inermis; pericarpio tenui. Antheræ 3–5, sinuosæ, capitato-connatæ.*

1. SICYOS AUSTRALIS, *Endl.*

Sicyos australis, Endl. Prodr. Fl. Norf. p. 67.
S. angulatus, Forst. Prodr. Ins. Austr. p. 68; Hook. f. Fl. N. Zeal. p. 72, non Linn.
S. Fretensis, Hook. f. in Lond. Jour. Bot. 6, p. 473.

HAB. Bay of Islands, New Zealand. New South Wales: probably near Sydney.

Both the male flowers and the fruit are less than half the size of those of *S. angulatus*, being no larger than in *S. parviflorus;* which, however, has a different foliage.

2. SICYOS LÆVIS, Sp. Nov.

S. glaber; foliis cordatis brevissime petiolatis vix lobatis; racemo masculo simplici brevi; fructu ovato glaberrimo inermi.

HAB. Andes of Peru, in the vicinity of Obrajillo.

Only a single and small specimen of this plant occurs in the collection, with male flowers and with immature fruit. The stem is slender, almost filiform, *glabrous*, as is the whole plant, except a slight hairiness on the younger foliage. *Leaves cordate* with a deep sinus, which exceeds the comparatively *very short petiole*, so that in the specimen they appear somewhat as if clasping; they are 1½ to 2 inches long (the petiole 2 or 3 lines long), ovate in outline, cuspidate-acuminate, *nearly entire*, or slightly five-lobed or angulate-toothed, denticulate, thin and membranaceous, sparsely roughened on both sides with small papillæ. Flowers monœcious; both kinds often produced from the same axils. *Male raceme simple*, short and rather few-flowered, with the peduncle scarcely equalling the leaves; the flowers only 2 lines in diameter, of the same structure as in *S. parviflorus:* the united filaments forming a filiform column nearly as long as the corolla. Anthers apparently only 3, connate into a sinuous mass. Fertile peduncle 2 lines long, probably bearing a number of female flowers in a head, as there are 3 or 4 fructified ovaries or young *fruits:* these are *ovate, very glabrous, wholly unarmed* and naked, pointed but not beaked, somewhat compressed, 2 or 3 lines long. Ovule and the half-grown seed solitary from the summit of the single cell.

§ 2. SICYOCARYA.—*Fructus ovato-pyramidatus vel oblongus, 4–6-angulatus (rarissime triqueter), inermis, pl. m. rostratus; pericarpio incrassato. Antheræ 2–5, sinuosæ, basi connatæ; connectivo angusto.*

Not being disposed to found a genus upon the form and texture of the fruit, I characterize the following Hawaiian species under a distinct section or subgenus of *Sicyos*. One of them, *S. pachycarpus*, has already been published: but its mature fruit was not known. The second has the same habit as well as structure. The third, *S. cucumerinus*, would never by itself be taken for a *Sicyos;* yet it appears to be a strict congener of the two others. *Sicyos triqueter* of Moçino & Sesse, known to DeCandolle only by a drawing, appears also to belong to this group. The filaments, as in true *Sicyos*, are perfectly united to the summit; the cells of the anthers, which are only slightly sinuous, are separated by a somewhat dilated and plane, although narrow connective; indicating that the anomalous *S. montanus*, of Pœppig and Endlicher, should perhaps be retained as a third section, rather than excluded to form the type of a new Sicyoid genus.* The fruit of the latter is said to be *obtusely pentagonal*, but it is not so delineated in the plate.

* § 3. SICYOPSIS.—*Fructus obovatus, turgidus, inermis, hirsutus, infra apicem obtusissimum dentibus calycinis subulatis deflexis coronatus; "pericarpio baccato." Columna staminum extremo apice trifida. Antheræ 3 liberæ, seu 5 triadelphæ; connectivo dilatato plano utrinque emarginato.*

S. MONTANUS, Pœpp. & Endl. Nov. Gen. & Spec. 2, p. 53, t. 172.

3. Sicyos (Sicyocarya) pachycarpus. (Tab. 80.)

S. foliis cordato-rotundis angulato-sublobatis denticulatis subtus papilloso-scabridis seu novellis hispidulis; paniculis masculis subsimplicibus; fructu ovato-pyramidato 5–6-quetro glabrato, juniore tenuiter rostrato.

Sicyos pachycarpus, Hook. & Arn. Bot. Beech. Voy. p. 83.

Hab. Oahu, Sandwich Islands; on the Kaala Mountains, in the district of Waianae. (Also found by Lay & Collie, Gaudichaud, &c.) Maui; on the mountains in the western part of that island.

An herbaceous vine (the root unknown), with much the habit of *S. angulatus*. Stems slender, strongly angled, nearly glabrous or glabrate, sometimes at first beset with slender and glandular-tipped hairs. *Leaves* thin and membranaceous, 3 to 5 inches in diameter, *rounded and cordate angled*, sometimes inclining to reniform and very obscurely lobed, more commonly *angularly five-lobed* (or seven-lobed?); the lobes very short and triangular, and the sinuses very broad, the terminal lobe largest; the margin barely *denticulate;* the upper surface glabrous, or sparsely papillose-scabrous; the *lower sometimes hispid-pubescent* when young, soon glabrate, or more or less papillose-scabrous. Petioles one or 2 inches long, glabrate or glandular-pubescent. Tendrils 2–3-cleft. Flowers of both kinds usually from the same axils; the *male flowers* small (the buds only a line in diameter), in racemose, rather small, and *simple panicles*, on peduncles of one to 3 inches long, which, with the short pedicels, are glandular-pubescent. Our specimens, however, do not well exhibit the male inflorescence. Perianth, as in the genus, accrescent after expanding, becoming nearly 3 lines in diameter, at length rotate, five-cleft to the middle, with 5 minute and subulate calyx-teeth at the sinuses; the lobes of the corolla triangular-ovate, sparingly pubescent externally. Anthers 5, or sometimes only 4 or 3, collected in a head at the summit of the slender column formed of the united filaments, distinct but sessile, oblong, two-celled, the cells parallel and margining a narrow (or at first roundish) connective, or else one of them one-celled, sinuous, but only moderately so, and capable of being straightened when soaked. Female flowers numerous in a capitulum, terminating a short peduncle of a line or two in length, or in fruit becoming 3 to 6 lines long. Perianth pubescent; the tube produced beyond the fusiform-ovate ovary into a narrow neck or short beak, the dilated-limb like that of the male flowers but smaller. Stigmas 3, clavate-capitate, subsessile. Ovary one-celled, with a single suspended ovule. *Fruit ovate-pyramidal*, several usually ripening in the head, closely sessile on the summit of the short common peduncle, 5 to 7 lines long, when young puberulent, at length *glabrate, wholly unarmed* and smooth, *five–six-angled*, the angles salient and sharp, *pointed with a slender beak* of 2 or 3 lines in length, which usually withers away before maturity: in the dry state the fruit appears *nut-like, the pericarp being thick and hard*, nearly crustaceous, one-celled, one-seeded. Seed obovate, turgid; the testa roughened, thick and coriaceous. Embryo amygdaloid: the cotyledons thicker than in *S. angulatus*. Radicle short, superior.

PLATE 80.—SICYOS (SICYOCARYA) PACHYCARPUS: with flowers and fruit, of the natural size. Fig. 1. A male flower-bud. 2. Andrœcium. 3. Lateral view of one of the anthers. 4. An anther spread out, to show the connective. 5. A female flower. 6. A fruit, of the natural size. 7. A longitudinal section of the same. 8. A transverse section of the same. 9. A seed. 10. Vertical section of the same.—The details magnified, except Figs. 6–8.

4. SICYOS (SICYOCARYA) MACROPHYLLUS, Sp. Nov. (Tab. 81.)

S. foliis magnis cordato-rotundis tri–quinquelobatis argute denticulatis subtus puberulis; paniculis masculis umbellato-compositis longe pedunculatis, pedicellis filiformibus; fructu ovato 5–6-angulato glabrato rostrato.

HAB. Hawaii, Sandwich Islands; in the forests of Mouna Kea, towards their upper margin.

An herbaceous vine, probably tall-climbing; the strongly angled stems, like the petioles, &c., somewhat pubescent, or glabrate. *Leaves rounded-cordate*, 3–5-*lobed*, either slightly or deeply, in the latter case with acute sinuses, *large*, 7 to 10 inches in diameter, membranaceous, glabrous or nearly so above, rather softly *puberulent underneath*, the short and fine pubescence at length nearly deciduous, not papillose-scabrous, the margin coarsely and *sharply denticulate* with mucroniform callous-tipped teeth. Petioles 3 inches long. Tendrils three-cleft. Male and female inflorescence usually from the same axils. *Male panicles umbellate* (4 or 5 together) at the summit of a deeply grooved *long and slender peduncle* (of 5 or 7 inches in length), glandular-puberulent, as well as the exterior of the flower-buds: the *filiform pedicels* often fascicled, 4 or 5 lines long. Perianth with a turbinate tube, five-cleft above the middle, or at length the accrescent and triangular-ovate lobes of the corolla longer than the tube, greenish-white, becoming 5 lines in diameter when expanded; the calyx-teeth short and subulate. Andrœcium as in the foregoing species, except that the anthers (either 3 or 5) are themselves more or less syngenesiously united, often somewhat twisted. Fertile flowers not seen. *Fruit ovate, 5–6-angled, nearly glabrous*, wholly unarmed, in an immature state conspicuously beaked, in size and character closely resembling that of the preceding species. The fruits are clustered on the summit of a peduncle which is 2 inches in length.

Perhaps intermediate states will occur between this and *S. pachycarpus*. Our specimens of the two are not sufficiently complete to remove all doubt. But this would seem to differ specifically in the foliage and inflorescence, notwithstanding the similarity of the fruit.

Plate 81.—Sicyos (Sicyocarya) macrophyllus: portion of branches, of the natural size. Fig. 1. A male flower-bud. 2. A male flower. 3. Andrœcium. 4. Transverse section of the same. 5. Young fruit, of the natural size. 6. Vertical section of the same.—The details magnified, except Figs. 5 and 6.

5. Sicyos (Sicyocarya) cucumerinus, Sp. Nov. (Tab. 82.)

S. glaber; foliis late cordatis integris denticulatis; paniculis masculis breviter pedunculatis sæpe trifidis racemosis; fructu oblongo 5–6-angulato glaberrimo.

Var. *β. foliis triangulari-cordatis promisse acuminatis.*

Var. γ. *foliis pedatilobis, nempe fere tripartitis, segmentis lateralibus plus minus bilobis.*

Hab. Hawaii, Sandwich Islands; in the upper part of the forests of Mouna Kea.

The three specimens (none of them very perfect), apparently from different stations, but in the same belt of mountain forest, differ in their foliage. In that assumed as the typical form, the leaves are *broadly cordate*, with a deep and narrow sinus, occasionally almost reniform, mostly acuminate, *undivided*, and showing scarcely any tendency to become lobed, 3½ to 6½ inches in diameter, *glabrous*, as are the angled stems and even the inflorescence, membranaceous, but not very thin; the margin sharply *denticulate* with mucroniform callous-pointed teeth. The var. β. presents a *triangular-cordate* leaf, 5 inches long and 3 wide at the base, where it somewhat inclines to have lateral lobes, the apex *long-acuminate:* the petiole somewhat pubescent. The var. γ. exhibits smaller *leaves, pedately lobed*, being *all three-parted*, with narrow sinuses, the *lateral divisions more or less two-lobed*. The male inflorescence, in the best developed specimens, consists of 3 compound and lax racemose *panicles*, on an axillary *short peduncle* (of an inch or two in length): pedicels filiform, 2 or 3 lines long, glabrous. Perianth of the male flowers glabrous, five-cleft to the middle, with minute calyx-teeth at the sinuses externally, when expanded nearly rotate and 3 lines in diameter. Anthers 5 or 6, somewhat twisted, nearly as in *S. pachycarpus*. Perianth of the fertile flowers not seen. Female inflorescence at the summit of a peduncle from the same axil with the male panicle, and sometimes 2 inches long. The fructified ovaries about 3 together, oblong, pointed with a tapering beak, glabrous, one-celled, with a single suspended ovule. *Fruit oblong*, nearly an inch in length, 4 or 5 lines in diameter, apparently somewhat fleshy and drupaceous when fresh, 5–6-*angled*, but less sharply so than in the preceding species, smooth and glabrous, the thick pericarp in the dry state coriaceo-crustaceous, one-celled, one-seeded, not beaked. Seed with a smooth and rather thin testa: cotyledons oblong, thickish.

Plate 82.—Sicyos (Sicyocarya) cucumerinus: portions of the three forms. Fig. 1. Flower-bud, from the var. β. 2. Flower, from

the same. 3. Andrœcium. 4. Vertical section of a fructified ovary. —These variously magnified. 5. Transverse, and 6, longitudinal section of the fruit from var. α., of the natural size. 7. The seed. 8. Embryo.

There are several undeterminable specimens in the collection. One of them, consisting of foliage only, from the mountains of Tahiti, probably belongs to one of the four still undescribed species of *Cucurbita* of Solander, enumerated by Forster at the end of his Prodromus. Two others, from Luzon, are apparently species of *Bryonia*, but too imperfect for determination.

Lagenaria vulgaris was found in cultivation at all the larger Pacific Islands.

Cucurbita Aurantia? the "Arroro" of the Tahitians, is said to grow in mountain woods at Tahiti. Probably it is one of the species enumerated by Solander. There are no specimens in the collection.

ORD. BEGONIACEÆ.

1. BEGONIA, *Linn.*

* *Brasilienses.*

1. BEGONIA LUXURIANS, *Scheidw.*

Begonia luxurians, Scheidw. in Dietr. & Ott. Allgem. Gartenz. 1848, p. 131; Walp. Ann. Bot. 2, p. 651.

HAB. Organ Mountains, Brazil: where it was also collected by Gardner (No. 607), and by Pohl.

The late Dr. Gardner says of this species: "This is one of the most handsome of the genus I have yet met with. It grows in rather wet places in the virgin forests, and reaches sometimes to the height of fourteen or fifteen feet. April, 1837."—Gardn. in herb. Hook. Only the male plant is known. If rightly referred to the *B. luxurians*, briefly characterized by Scheidweiler, it is a smoother form of that species, the leaves, &c., not being hispid. Some of the numerous leaflets, moreover, are bisected or trisected. The (male) flowers are small, and crowded in a compound corymbose panicle, which is very long-peduncled.

2. BEGONIA VITIFOLIA, *Schott.*

Begonia vitifolia, Schott, in Spreng. Syst. Veg. Cur. Post. p. 407; Walp. Repert. 2, p. 210, excl. syn. Hook.
B. truncata, Velloz. Fl. Flum. 10, p. 47.

HAB. Organ Mountains, Brazil; where it was also gathered by Gardner.

3. BEGONIA RAMENTACEA, *Paxton.*

Begonia ramentacea, Paxton, Mag. Bot. 11, p. 73, cum ic.

HAB. Near Rio Janeiro.

A large and coarse species, apparently not uncommon near Rio Janeiro, where it was gathered by Pohl, and by Gardner (No. 608). I refer our plant to this species from the appropriateness of the name to the ramentaceous petioles; the work in which *B. ramentacea* is figured not being within my reach.

4. BEGONIA VAGINANS, *Velloz.*

Begonia vaginans, Velloz. Fl. Flum. 10, t. 37; Walp. Repert. 2, p. 217.

HAB. Near Rio Janeiro.

5. BEGONIA CASTANEÆFOLIA, *Dietr. & Otto.*

Begonia castaneæfolia, Dietr. & Otto, Allgem. Gartenz. 4, p. 356; Walp. Repert. l. c.
B. patens, Griseb. in Herb. Hook.

Hab. Near Rio Janeiro. (Evidently allied to *B. confertiflora*, of Gardner).

6. Begonia Hookeriana, *Gardn.*

Begonia Hookeriana, Gardn. in Hook. Lond. Jour. Bot. 4, p. 135.

Hab. Organ Mountains, Brazil.

7. Begonia reticulata, *Gardn. l. c.*

Hab. Brazil; near Rio Janeiro. (Foliage, without flowers or fruit.)

8. Begonia coccinea, *Hook.*

Begonia coccinea, Hook. Bot. Mag. t. 3990; Walp. Repert. 2, p. 214.

Hab. Near Rio Janeiro, or in the Organ Mountains, Brazil.

9. Begonia Fischeri, *Dietr. & Otto.*

Begonia Fischeri, Dietr. & Otto, Allgem. Gartenz. 4, p. 354; Hook. Bot. Mag. t. 3532; Walp. Repert. l. c.

Hab. Organ Mountains, Brazil. (The same as Gardner's No. 5590, and Pohl's No. 1824.)

10. Begonia hastata, *Velloz.*

Begonia hastata, Velloz. Fl. Flum. 10, t. 54?

Hab. Organ Mountains, near Rio Janeiro. (A very imperfect specimen.)

11. Begonia erecta, *Velloz.*

Begonia erecta, Velloz. Fl. Flum. 10, t. 43?

Hab. Organ Mountains, Brazil.

This might be the *B. bidentata* of Raddi, in Spreng. Syst. Veg.; but the two wings of the fruit, although broad and equal, are not bidentate.

12. Begonia villosa, *Lindl.*

Begonia villosa, Lindl. Bot. Reg. t. 1252; Walp. Repert. 2, p. 214.

Hab. Rio Janeiro.

There are indeterminable specimens of two more species in the Brazilian collection.

* * *Peruvianæ (Tuberosæ).*

13. Begonia octopetala, *L'Her.*

Begonia octopetala, L'Her. Stirp. Nov. p. 101; Hook. Bot. Mag. t. 3559.

Hab. Amancaes Mountains, near Lima. (Without flowers or fruit.)

14. Begonia geraniifolia, *Hook.*

Begonia geraniifolia, Hook. Bot. Mag. t. 3387; Walp. Repert. 2, p. 208.

Hab. Amancaes Mountains, near Lima.

The stems, a span or more in height, spring from a round tuber, and are often terminated with flowers while the leaves are still unfolding. The broadly triangular capsules bear three upwardly dilated wings, one of which is longer than the others, but narrow, and ascending.

* * * *Philippenses.*

15. Begonia repens, *Blume.*

Begonia repens, Blume, Enum. Pl. Jav. 1, p. 95; Walp. Repert. 2, p. 208.

Hab. Luzon; on mountains in the vicinity of Baños.

16. Begonia Cumingii, Sp. Nov.

B. erecta, perennis? glabrata; foliis dimidiato-cordatis vel semisagittatis acuminatis grosse dentatis margine denticulatis; fructu subæqualiter trialato, alis completis.

Hab. Majaijai Mountains, Luzon.

A very imperfect fruiting specimen, which on comparison proved to belong to the same species as No. 1897 of Cuming's Philippine collection, which so far as I can determine is undescribed. The plant is probably *erect*, from a *perennial* root: it is *glabrate;* but the young parts, especially the petioles and the veins of the leaves beneath, are more or less ferrugineous-hirsute. *Leaves* long-petioled, elongated, *half-cordate or half-sagittate*, with the basal portion rounded, above tapering into a slender *acumination*, unequally and *coarsely-toothed* around the whole outer margin and above the middle of the other edge, also *denticulate*, 5 or 6 inches long, an inch or two in width, paler beneath, punctate. *Capsule* elliptical, 7 or 8 lines long, very smooth, *almost equally three-winged; the wings complete* from the base to the apex, even, 2 or 3 lines broad.

17. Begonia æquata, Sp. Nov.

B. repens? glaberrima; ramis gracilibus; foliis fere æquilateris ovato-oblongis acuminatis parce dentatis basi obtusis trinervatis breviter *petiolatis tenuibus; stipulis lanceolatis petiolum adæquantibus; pedunculis brevibus axillaribus uni–paucifloris; fructu æqualiter trialato, alis completis.*

Hab. Luzon; on mountains near Baños.

Stems slender, occasionally throwing out rootlets at the nodes, therefore *probably creeping;* the branches and whole plant *glabrous. Leaves nearly equal-sided*, small (an inch or more in length), *thin, ovate-oblong*, coarsely and sharply *toothed* above the middle, *acuminate*, sparingly feather-veined, pale, rounded or *obtuse at the base*, where they are three-nerved or indistinctly five-nerved. *Stipules lanceolate*, pointed, scarious, deciduous, 3 lines long, *as long as the petiole. Peduncles axillary, very short*, forked, the filiform divisions or pedicels shorter than the leaves, one–three-flowered. Divisions of the perianth 2, rounded, barely 2 lines long. *Capsule* orbicular in outline, *equally three-winged; the wings complete* from the base to the apex, even, a line and a half wide.

Ord. CACTACEÆ.

1. MAMILLARIA, *Haw.*

1. Mamillaria flavescens, *DC.*

"*M. caulibus pluribus ovato-cylindraceis e radice crassa; aculeis setaceis rectis brunneis; floribus verticalibus (ultrapollicaribus) flavis; sepalis lineari-oblongis obtusis patulis reflexisve circa* 20; *petalis fere* 20 *ovato-oblongis subobtusis; stigmatibus* 9 *radiatis.*" Engelm. Ms.

Mamillaria flavescens, DC. Prodr. 3, p. 459; Pfeiff. Enum. p. 10?
M. prolifera, Haw. Synop. p. 177, ex Salm-Dyck.

Hab. Near Lima, Peru.

There are no specimens in the collection; but there is a good drawing, made from the living plant by the late Mr. Agate; from which Dr. Engelmann has drawn up the characters given above, and the subjoined description and remarks.—"*Stems several* from the same very *thick root*, or proliferous at the base, 2½ to 3 inches high, an inch and a half or less in diameter, *ovoid-cylindrical; the setaceous straight prickles* half an inch in length, *brown*. *Flowers upright* from the summit of the stems, 14 lines long, 9 lines in diameter; the *spreading sepals* about 20 in number, *linear-oblong, obtuse*, yellowish: *petals* about the same number, *ovate-oblong, obtusish, yellow*. Style half an inch long: *stigmas* 9, *radiate*.

"*M. flavescens* is one of the very few species coming from tropical South America. The descriptions which I find in different works agree tolerably well with our plant; though the stems are said to be proliferous towards the summit, the spines are generally lighter-coloured, and the yellow flowers appear in a ring around the top."

2. CEREUS, *Haw.*

1. Cereus Chilensis, *Colla*, var. polygonus, *Salm-Dyck.*

Cereus Chilensis, Colla, Pl. Hort. Ripul. App. 2, p. 342; Pfeiff. Enum. p. 86; Salm-Dyck, Cact. Hort. Dyck. p. 44 & 199.

Hab. Chili; common from near Valparaiso to the Cordilleras, according to Dr. Pickering's memoranda. A drawing only in the collection.

"This species evidently belongs to the section *Velutini* of Prince Salm.: stout and erect *Cerei*, with broad and interrupted ribs, very narrow grooves, and covered with a more or less velvety epidermis;—all natives of Chili and adjacent countries. This appears to have 13 or 14 ribs [14 or 15, Pickering], more than any species of this section, with the exception of the above-named form, which has 15. The tubercles of the ribs are 9 lines long, 6 lines wide, and bear towards their upper end a whitish areola, of 3 lines in diameter, armed with 12 to 16 stout, almost conical, straight spines, the 3 to 5 inner ones the stoutest, 4 to 6 or 6 to 8 lines long. The grooves between the ribs are very narrow, acute and not deep. Of no species of this section do the flowers appear to be known. The following description of the flower figured by Mr. Agate, therefore, supplies a desideratum.—Flowers 5 inches long, sessile above the areolæ, and in the transverse incision between the tubercles; the tube curved upwards, over 3 inches long, gradually enlarging above; the limb 2 inches in diameter; ovary subglobose, horizontal, 9 or 10 lines long, densely imbricated with nearly a hundred sepaloid scales; sepals about 100, imbricated on the tube, the lower triangular, the upper successively becoming larger and lanceolate, greenish, with the apex somewhat reddish; about 15 of the uppermost ovate-lanceolate, acute, tipped with light reddish-brown; petals 15 to 18, ovate, mucronate, 4 or 5 lines wide, white." Engelmann, Ms.

There are no specimens of *Cactaceæ* in the collection, except an imperfect sterile branchlet of some *Opuntia* from Rio Negro, North Patagonia, which is undeterminable. In his manuscript list, Dr. Pickering enumerates twelve species as having been noticed at Rio Janeiro; viz. one *Melocactus*, five *Cerei*, one *Epiphyllum*, one *Opuntia*, a *Pereskia*, and three species of *Rhipsalis*. At Rio Negro, three *Opuntiæ*, a *Cereus*, and a doubtful *Mamillaria*. In Chili, besides the *Cereus Chilensis*, two *Echinocacti* and an *Opuntia* are mentioned. In the tropical region of Peru, from Lima to the Cordilleras, a *Melocactus*, four or five *Cerei*, and as many *Opuntiæ* are noted; and three or four others are mentioned as growing in the western Cordillera region, from Obrajillo to Culnai. Among these, one of doubtful genus: having a slender and upright trunk, 8 or 10 feet high, with spreading branches at the summit, distant clusters of long spines, and large, dry, and stony seeds. A second species resembling the last, but lower (8 inches high) and less woolly, with smaller fruit, is mentioned as occurring in the pampas or pasture region of the Cordilleras, two and a half leagues above Culnai.

ORD. GROSSULACEÆ.

1. RIBES, *Linn.*

1. RIBES MAGELLANICUM, *Poir.*

Ribes Magellanicum, Poir. Suppl. 2, p. 856; Hook. f. Fl. Antarc. p. 269.

HAB. Orange Harbour, Fuegia; in woods near the coast.

"A tall shrub, with black fruit," which is said by Dr. Hooker to have a very agreeable flavour. A species of the same group with *R. nigrum* and *R. Hudsonianum* of the northern regions.

2. RIBES GLANDULOSUM, *Ruiz & Pav.*

Ribes glandulosum, Ruiz & Pav. Fl. Per. & Chil. t. 233, f. 6; DC. Prodr. 3, p. 481.

HAB. Chili; south of Valparaiso: also on the lower Cordilleras.

3. RIBES PUNCTATUM, *Ruiz & Pav. l. c.*

HAB. Chili; near Valparaiso. (Foliage only.)

4. RIBES ALBIFLORUM, *Ruiz & Pav. l. c.*

HAB. Andes of Peru, above Baños. (In fruit.)

Dr. Pickering mentions two other Peruvian species, one found near Obrajillo, the other at Culnai: but there are no specimens of them.

ORD. SAXIFRAGACEÆ.*

1. ESCALLONIA, *Mutis.*

1. ESCALLONIA SERRATA, *Smith.*

Escallonia serrata, Smith, Ic. Pl. Ined. t. 31; DC. Prodr. 4, p. 3; Hook. Ic. Pl. t. 540; Hook. f. Fl. Antarc. p. 279.

HAB. Orange Harbour, Fuegia; where it is a very abundant shrub.

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* Mr. Brown, in indicating the *Cunoniaceæ* and *Escallonieæ* as separate orders (in Flinders, Voy., and in Frankl. Narr.), remarked, that they were to be distinguished from *Saxifrageæ* by their habit, rather than by any important characters of fructification: and the remark still holds true. M. Alphonse DeCandolle (in Monogr. Campanul. p. 91, 1830), after seeking in vain for any floral characters whatever, proposed to consider them as tribes of *Saxifragaceæ*;—a view which was adopted in the Prodromus, by his father, and also by Endlicher, the latter merely raising four of the tribes of DeCandolle to the rank of orders, and appending *Bauera* to the *Cunonieæ*, as Brown had suggested. In the Flora of North America (1840), another suborder was added for *Philadelphus*, a genus which, although usually associated with two real Hydrangeaceous genera (*Decumaria* and *Deutzia*), was generally considered to be the type of a distinct order, and placed in the vicinity of *Myrtaceæ*. I am not aware that this view has been followed by any botanist, except Dr. Hooker, who in his Flora Antarctica (1847), under *Cornidia*, distinctly refers *Philadelphus* to the "class *Saxifrageæ*." There is nothing to distinguish *Philadelphus* from the *Hydrangieæ* except the convolute æstivation of the petals, which, although peculiar, is surely not of subordinal consequence. Whatever value might have been assigned to it, as separating *Philadelphus* from the *Saxifragaceæ*, is now reduced to insignificance by the convolute-imbricated æstivation of the petals of *Jamesia*, Torr. & Gray (vide Pl. Fendl. p. 55), their imbricated æstivation in *Fendlera*, Engelm. & Gray (Pl. Wright. 1, p. 77, & 2, p. 64), and the almost free ovary in *Carpenteria*, Torr. Pl. Fremont. p. 12, t. 7, which in other respects scarcely differs from *Philadelphus* itself. It would seem, therefore, that the order *Saxifragaceæ* should embrace five tribes, nearly as adopted by DeCandolle, characterized solely by their organs of vegetation, namely:—the *Escallonieæ*; woody plants, with alternate, simple leaves, destitute of stipules; the *Cunonieæ*, with opposite

2. Escallonia rubra, *Pers.*

Escallonia rubra, Pers. Euch. 1, p. 234; Hook. Bot. Mag. t. 2890; DC. l. c.
Stereoxylon rubrum, Ruiz & Pav. Fl. Per. & Chil. 3, t. 236.

Hab. Chili; in ravines above Valparaiso.

3. Escallonia illinita, *Presl.*

Escallonia illinita, Presl, Rel. Hænk. 2, p. 49, t. 59; Hook. & Arn. Bot. Misc. 3, p. 343; Lindl. Bot. Reg. t. 1900; Remy, in Gay, Fl. Chil. 3, p. 60.
E. Mertensiana, Ruprecht, in sched. ex Herb. Acad. Petrop.

Hab. Chili; near Valparaiso, and on the first Cordilleras above Santiago. (Both α. and β. Hook. & Arn. l. c.)

4. Escallonia revoluta, *Pers.*

Escallonia revoluta, Pers. l. c.; DC. l. c.; Hook. & Arn. Bot. Misc. 3, p. 341; Remy, in Gay, Fl. Chil. 3, p. 55.
E. affinis, Ruprecht, l. c. (var. parvifolia minus hirsuta).
Stereoxylon revolutum, Ruiz & Pav. l. c.

Hab. Chili; near Valparaiso: with some sterile branches of the

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(simple or compound) leaves and interpetiolar stipules; the *Bauereæ*, with opposite and compound, sessile, exstipulate leaves; the *Hydrangieæ*, with opposite and simple, exstipulate leaves; and the *Saxifrageæ;* herbs, with alternate or opposite, simple or compound leaves, rarely with manifest stipules. More or less united and distinct styles, and a partly or wholly free or adnate calyx occur in each of these tribes. Moreover *Cardiandra*, Sieb. & Zucc., a strictly Hydrangeaceous genus, has alternate leaves. Dr. Lindley indeed takes a different view, which, however, will probably be reconsidered. He not only gives to all these groups (except *Bauereæ*, to which he inadvertently attributes whorled leaves and porous anthers) the rank of distinct orders, but even excludes from his Saxifragal alliance (singularly characterized as having little or no albumen in the seeds!) the *Escallonieæ* and *Philadelpheæ*, retaining moreover in the latter *Deutzia*, although it exactly accords with his diagnosis of *Hydrangeaceæ* and *Decumaria*, which is more closely related to *Schizophragma*,—a genus retained by him in *Hydrangeaceæ*, along with *Broussaisia*, notwithstanding their consolidated styles, as also is *Cardiandra*, in spite of its alternate leaves.

small-leaved and less pubescent form, which is the *E. affinis* of Ruprecht.

5. Escallonia arguta, *Presl.*

Escallonia arguta, Presl. Rel. Hænk. 2, p. 48, t. 58; Hook. & Arn. Bot. Misc. l. c.
E. leucantha, Remy, in Gay, Fl. Chil. 3, p. 53?

Hab. Chili; between Valparaiso and Santiago, and on the middle Cordilleras.

6. Escallonia pulverulenta, *Pers.*

Escallonia pulverulenta, Pers. l. c.; DC. Prodr. 4, p. 5; Hook. & Arn. l. c.
Stereoxylum pulverulentum, Ruiz & Pav. Fl. Per. & Chil. 3, p. 15, t. 237.

Hab. Chili; near Valparaiso, and Cordilleras, near Casa Blanca.

Some specimens approach the *E. Berteriana*, DC.; which (with *E. resiniflua*, Walp.) probably is only a glabrate and often resiniferous form of this species, with the leaves mostly acute at the base. It has the same very short styles.

2. CARPODETUS, *Forst.*

1. Carpodetus serratus, *Forst.*

Carpodetus serratus, Forst. Char. Gen. t. 17, & Prodr. p. 48; A. Rich. Fl. N. Zel. p. 366; A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 247; Hook. Ic. Pl. t. 564; Fenzl, in Regensb. Denkschr. 3, p. 155, t. 1; Hook. f. Fl. N. Zeal. p. 78.

Hab. Bay of Islands, New Zealand; on the banks of streams. (In fruit.)

The details of this plant are well illustrated by Fenzl. *Carpodetus*, long viewed as an anomalous genus, has of late been referred to the *Escallonieæ* by Lindley, Endlicher, and Dr. Hooker, apparently with good reason.

3. QUINTINIA, *Alph. DC.*

1. Quintinia serrata, *A. Cunn.*

Quintinia serrata, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 2, p. 256; Hook Ic. Pl. t. 558; Hook. f. Fl. N. Zeal. p. 78.

Hab. New Zealand: in dry woods at the Bay of Islands. (In fruit.)

4. CALLICOMA, *Andr.*

1. Callicoma serratifolia, *Andr.*

Callicoma serratifolia, Andr. Bot. Rep. t. 566; Sims, Bot. Mag. t. 1811; DC. Prodr.

Hab. New South Wales; in the neighbourhood of Sydney.

5. CERATOPETALUM, *Smith.*

1. Ceratopetalum gummiferum, *Smith.*

Ceratopetalum gummiferum, Smith, N. Holl. 1, p. 9, t. 3; DC. Prodr. 4, p 13.

Hab. New South Wales, near Sydney.

6. SPIRÆANTHEMUM, Nov. Gen.

Flores polygamo-dioici vel hermaphroditi. Calyx quadri–quinquefidus. æstivatione valvatus, persistens. Corolla nulla. Stamina 8 *vel* 10, *imæ basi calycis inserta, fere hypogyna: filamenta filiformia, fl. masc. exserta, hermaphrodito-fert. calyce haud longiora: antheræ didymæ,* *biloculares, longitudinaliter dehiscentes. Squamulæ disci hypogynæ fl. masc. 4 vel 5, subcoalitæ, apice dentatæ; fl. fert. 8 vel 10, staminibus alternæ, sæpe emarginatæ. Ovaria maris nulla; fl. fœm. 4 vel 5, discreta, libera, calycis lobis alterna, ovoideo-fusiformia, in stylos attenuata: stigmata terminalia subcapitata. Ovula gemina collateralia, vel solitaria, pendula, subanatropa. Folliculi 4–5, compressi, cartilaginei vel coriacei, intus longitudinaliter dehiscentes, mono-dispermi. Semina oblonga, compressa; testa membranacea aut superne aut utrinque alato-producta. Embryo subcylindricus, albumine carnoso parum brevior; cotyledonibus oblongis planiusculis radicula cylindrica supera subdimidio brevioribus.—Frutices vel arbusculæ Polynesicæ; foliis oppositis seu verticillatis simplicibus; stipulis interpetiolaribus deciduis; floribus parvis paniculatis; pedicellis articulatis.*

This curious genus, founded on two species, one from the Samoan, the other from the Feejee Islands, would appear to have more resemblance to *Aphanopetalum*, Endl., than to any other. It is remarkably distinguished from all known Cunoniaceous genera by its wholly separate pistils, of the same number as the sepals. Although very different in habit and in foliage, it accordingly exhibits the floral characters of *Crassulaceæ*,—an order which was already difficult enough to be distinguished from *Saxifragaceæ*, on account of the syncarpous ovaries of *Diamorpha* and *Penthorum*.* In this respect it also imitates *Rosaceæ* (from which the opposite leaves and albuminous seeds exclude it); the pistils simulating those of a *Spiræa*, as closely as the foliage and inflorescence of the species of the Saxifrageous genus *Astilbe* simulate the *Spiræa Aruncus*. The generic name alludes to this resemblance.

1. SPIRÆANTHEMUM SAMOENSE, Sp. Nov. (Tab. 83.)

S. ramis pubescentibus; foliis oppositis ovalibus subacuminatis basi rotundatis serrulatis insigniter penninerviis; paniculis folia excedentibus; folliculis dispermis; seminibus utrinque appendiculatis.

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* It has even similar hypogynous scales, the want of which in *Saxifragaceæ* is suggested by Lindley (Vegetable Kingdom, p. 344) apparently as a reason for not admiting the *Crassulaceæ* into the Saxifragal alliance.

Hab. Samoan or Navigators' Islands (Tutuila?): on mountains at the elevation of 2,500 feet.

A shrub or tree; with nodose, hirsutely *pubescent branches. Leaves opposite, oval*, or elliptical, simple, membranaceous or chartaceous in texture, 2½ to 5 inches long, from one to 3 inches wide, on hairy petioles from half an inch to an inch and a half in length, *rounded at the base, somewhat pointed* or acute at the apex, *serrulate* with sharp teeth, *prominently pinnately veined* with 9 to 11 pairs of veins, glabrate, except the midrib and veins underneath. Stipules interpetiolar, oblong, obtuse, entire, membranaceous, sparsely hairy outside, half an inch long, caducous. Flowers polygamo-diœcious, very small, greenish, in ample, compound and loose, pubescent *panicles usually exceeding the leaves.* These arise from the upper axils, or are sometimes terminal. Peduncles longer than the petioles. Principal bracts lanceolate or linear, opposite, or rarely quaternate, deciduous. Pedicels crowded, sometimes fascicled, a line or two in length, articulated in the middle. Flower-buds a line long. Calyx more or less pubescent outside, either four-cleft or five-cleft, or rarely even six-cleft; the segments ovate-triangular, valvate in æstivation. Corolla none. Stamens twice as many as the segments of the calyx, and inserted upon its very base, almost or entirely hypogynous, distinct: filaments filiform, glabrous, in the sterile flowers twice the length of the calyx, in the fertile flowers rather shorter than the calyx, persistent: anthers didymous, two-celled; the cells opening lengthwise. Glands of the disk hypogynous and scale-like; in the sterile flowers as many as the lobes of the calyx, oblong, toothed at the apex, more or less coalescent in the centre of the flower; in the fertile flowers as many as the stamens and alternate with them, nearly half the length of the ovaries, cuneate-oblong, flat, truncate at the apex and usually emarginate. Gynæcium abortive or entirely wanting in the sterile flowers; in the fertile consisting of as many perfectly distinct and free pistils as there are lobes to the calyx. Ovaries ovoid-fusiform, pubescent, alternate with the calyx-lobes, tapering into a short persistent style, which is tipped with an obtuse somewhat capitate stigma. Ovules 2, collateral, pendulous from near the middle of the ventral suture, almost anatropous: the chalazal extremity considerably extended or appendaged. *Follicles two-seeded*, not seen mature, when unripe twice the length of the persistent calyx, silky-pubescent, somewhat compressed. *Seeds* pendulous, compressed, *appendaged at both ends;* the thin testa of the micropylar extremity being extended into a thin and obtuse wing; the lower or chalazal end produced into a subulate appendage of equal or greater length. Embryo not seen.

PLATE 83, *A.*—SPIRÆANTHEMUM SAMOENSE: a branch, with fertile flowers, of the natural size. Fig. 1. Portion of male inflorescence, of the natural size. 2. Male flower. 3. Vertical section of the same. 4. One of the glands of the disk, separated. 5. Fertile flower. 6. The same, with a part of the calyx cut away. 7. Vertical section of a fertile flower, showing the ovules, &c. 8. An ovule detached. 9. A fertilized ovule. 10. An unripe seed.—The details magnified.

2. SPIRÆANTHEMUM VITIENSE, Sp. Nov. (Tab. 83.)

S. glabrum; foliis oppositis et verticillatis obovato-ellipticis oblongisve obtusis basi attenuatis integerrimis paucivenosis paniculas excedentibus; folliculis monospermis; semine superne alato.

HAB. Feejee Islands; at Sandalwood Bay, Vanua-levu; and Muthuata, at an elevation of 1,500 feet.

Shrub or small tree (the size not recorded), *glabrous*, or the slender branchlets and inflorescence obscurely puberulent when young. Stipules not seen, probably small and very caducous. *Leaves opposite and often verticillate* in threes or fours, or even in fives, about 2 inches in length, *obovate-elliptical*, *oblong*, or oval, thin, but of a coriaceous texture, dull, *obtuse*, *entire*, *contracted at the base* into a petiole of 3 to 6 lines in length, *sparingly pinnately veined;* the veins only 4 or 5 pairs, connected by minute reticulated veinlets. Flowers minute, numerous, in rather small and cymose, axillary *panicles*, which are *shorter than the leaves*. Peduncles longer than the petioles. Bracts small, deciduous. Pedicels crowded, often fascicled, less than a line long, articulated at the base. Only one kind of flowers seen, which appear to be hermaphrodite. Flower-buds barely half a line in diameter, globose. Calyx glabrous, deeply cleft or parted into 4, 5, or rarely 6 triangular-ovate segments, valvate in æstivation. Corolla none. Stamens twice as many as the segments of the calyx, inserted into its very base, nearly hypogynous, distinct: filaments filiform, about the length of the calyx: anthers didymous, incumbent, two-celled, destitute of a connective; the cells opening lengthwise. Pollen-grains globose, simple, not very abundant. Glands of the disk hypogynous, as many as the stamens and alternate with them, scale-like, cuneate or oblong, fleshy, truncate or emarginate, sometimes slightly united? Pistils as many as the segments of the calyx and alternate with them, sparingly hairy, ovoid, entirely free and separate, tapering into a persistent style, which is tipped by a capitate-truncate stigma. Ovule solitary, affixed to the ventral suture near the middle, pendulous, between amphitropous and anatropous. *Follicles one-seeded*, almost glabrous, thrice the length of the persistent calyx, compressed, semiovate, sometimes slightly lunate, pointed by the style, coriaceo-cartilaginous in texture, a line and a half long, dehiscent down the ventral suture, from which a filiform edge often separates. *Seed winged at the apex* (the micropylar end), filling the cell, oblong, compressed, the thin and membranaceous testa not reticulated, below conformed to the oval nucleus, not at all produced at the base or chalaza, above extended into the thin and obscurely reticulated wing. Embryo straight, in the axis of rather copious fleshy albumen, occupying the greater part of its length, somewhat cylindrical, but the oblong cotyledons a little broader and flattened, and about half the length of the superior radicle.

PLATE 83, *B.*—SPIRÆANTHEMUM VITIENSE: a branch, of the natural size. Fig. 1. Diagram of the flower. 2. Flower. 3. Vertical section of the same. 4. Portion of the stamens and interposed glands of the disk. 5. Fruit, with the persistent calyx. 6. A follicle detached. 7. Vertical section of a follicle. 8. A dehiscent follicle. 9. A seed. 10. Vertical section of a seed. 11. Embryo detached.—The details magnified.

7. WEINMANNIA, *Linn.*

WEINMANNIA, Linn.; Juss.; H B. K.; Hook. f. Fl. N. Zeal. p. 79.
LEIOSPERMUM, Don, in Edinb. New Phil. Jour. 9, p. 85 & 91; Endl. Gen. p. 818.
ACKAMA, A. Cunn. in Ann Nat. Hist. 2, p. 358; Endl. l. c.
ARNOLDIA, Blume, Bijdr. p. 868; DC.; Endl. l. c.; Hassk. Pl. Jav. Rar. p. 325.

* *Novo-Zelandicæ.*

1. WEINMANNIA SYLVICOLA, *Banks & Soland.*

Weinmannia sylvicola, Banks & Soland. ined.; Hook. f. Fl. N. Zeal. p. 79.
W. sylvicola, *fuschioides*, & *betulina*, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 2, p. 322.

HAB. Bay of Islands, New Zealand.

The three forms, considered as species by Cunningham, occur in the collection. There are no specimens absolutely referable to *W. racemosa*, Linn. f.: but several approach it so closely as to render it probable, as Dr. Hooker suggests, that all belong to one species; which in that case should bear the last-mentioned name.—Dr. Hooker has shown that the character of Don's genus *Leiospermum* rests on an erroneous observation, so far as respects the New Zealand species. I may extend the remark to the species from the Society Islands, and also to the *Ackama rosæfolia*.

2. WEINMANNIA (ACKAMA) ROSÆFOLIA. (Tab. 84.)

W. arborea; ramulis petiolisque velutino-pubescentibus; foliolis 3–8-*jugis cum impari ellipticis argute serratis; paniculis decompositis patentibus; floribus subsessilibus minimis pentameris; petalis lineari-spathulatis calycem vix superantibus; capsula ovata turgida hirta; seminibus ovoideis undique crinitis.*

Ackama rosæfolia, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 2, p. 358; Hook f. Fl. N. Zeal. p. 79.

HAB. Bay of Islands, New Zealand.

Tree 30 or 40 feet high; the young *branchlets*, *petioles*, &c., cinereous or fulvous with a soft *velvety pubescence*. Stipules interpetiolar, ovate, caducous. Petioles with the elongated rhachis from 2 to 10 inches long, terete. *Leaflets* 3 *to* 8 *pairs and an odd one*, *elliptical* or oblong, from one to 2½ inches in length, or the lower smaller and roundish, *sharply serrate*, subsessile, nearly membranaceous in texture, pinnately veined, pubescent when young, at length glabrate, except the midrib and veins underneath. *Flowers minute* (two-thirds of a line across), *sessile* on the slender ramifications of the ample, compound or *decompound spreading panicles*, which are axillary, or else terminate short axillary branchlets. *Calyx* glabrous, *five-parted*; the lobes triangular-ovate (valvate in æstivation, according to Dr. Hooker), persistent. *Petals* 5, *linear-spatulate, scarcely exceeding the calyx*, deciduous. Stamens 10, inserted into the base of the calyx outside of the deeply ten-lobed disk, alternate with its lobes: filaments filiform, exserted; those opposite the petals longer than the others: anthers didymous, two-celled, opening longitudinally. Ovary free, densely hirsute, two-celled, many-ovuled: styles 2, distinct, filiform: stigmas minute, terminal. Ovules in several series, amphitropous. *Capsule ovate, turgid*, free, subtended at the base by the small and persistent calyx (which is now raised on an extremely short pedicel), *hairy*, 2 or 2½ lines long, two-celled, septicidal, the valves pointed by the persistent styles, at length two-cleft above. *Seeds* numerous or several in each cell, nearly half a line long, turgid-ovoid, slightly apiculate at each end, hemitropous, the short rhaphe slender: testa membranaceous, not reticulated, conformed to the nucleus, rather sparsely *beset all over with very long and lax hairs*. Embryo nearly the length of the sparing albumen: radicle cylindraceous: cotyledons broadly oval, thickish, about the length of the radicle.

Our specimens bear ripe fruit only, with an abundance of well-formed seeds, apparently in better condition than any previously examined. They are not "smooth and rostrate," as stated by Endlicher, although there is a minute apiculation at each end, nor are the perfect ones "extremely minute, and with a lax reticulated testa," as described by Dr. Hooker. Abortive seeds often occur to which this description will nearly apply, but the matured ones are not very small, the testa is conformed to the nucleus, not at all reticulated, and beset with very long hairs, like those of *Weinmannia* generally. Dr. Hooker remarks that *Ackama* is hardly distinct from *Weinmannia*, except in the form of the petals. He assigns, however, another character, namely a *valvate* calyx, and perhaps correctly: the few flowers that I possess are too far advanced to verify the point. But even if it be so, this character, along with the narrow petals and the paniculate inflorescence, will hardly serve to distinguish it as more than a subgenus of *Weinmannia*.

PLATE 84.—WEINMANNIA (ACKAMA) ROSÆFOLIA: a branch, in fruit, of the natural size. Fig. 1. Flowers (a portion of the inflorescence), from a specimen gathered by Cunningham, of twice the natural size. 2. Two flowers, from the same, magnified. 3. Vertical section of a flower. 4. A petal. 5. Stamens. 6. Transverse section of the ovary. 7. Ovules. 8. Capsule and persistent calyx. 9. Transverse section of a capsule. 10. Capsule, dehiscent. 11. A seed. 12. Vertical section of the same. 13. Transverse section of a seed through the cotyledons. 14. Embryo.—The details variously magnified.

* * *Polynesicæ.*

3. WEINMANNIA PARVIFLORA, *Forst.* (Tab. 85.)

W. arborescens; ramulis pedunculisque pubescentibus; foliis simplicibus ovatis oblongisve glabris calloso-serratis; racemis ternis vel subpluribus paniculatis; floribus parvis tetrameris; glandulis disci 8 *lineari-oblongis calyce vix brevioribus; stylis brevissimis; capsula fere glabra; seminibus oblongis utrinque comosis.—Variat; foliis crasso-coriaceis ovatis seu ellipticis breviter vel brevissime petiolatis; et foliis tenuioribus oblongis vel elongato-oblongis grosse sinuato-dentatis utrinque acutis vel acuminatis modice petiolatis.*

Weinmannia parviflora, Forst. Prodr. Fl. Ins. Austr. p. 29; Willd. Spec. Pl. 2, p. 438.
Leiospermum parviflorum, Don, in Edinb. Phil. Jour. l. c.; Guill. Zeph. Tait. p. 55.

HAB. Tahiti: on mountain ridges. (Elizabeth Island, Cuming.)

A *shrub* or *small tree;* the young *branches and inflorescence pubescent* or cinereous-hirsute. *Leaves all simple*, on petioles of from 1½ to 3 lines long, *ovate* or *oblong*, from an inch to 2 or 3 inches long, *serrate* with callous and incurved teeth, which are sometimes acute, sometimes very obtuse and separated by large sinuate sinuses, *glabrous*, or the midrib at first pubescent underneath, thick and coriaceous, or sometimes rather thin, in the more elongated forms mostly acute or pointed at both ends. Stipules rather persistent, oval, as long as the petioles. *Racemes* terminal *in threes, or several and panicled*, erect, from one to 3 inches long. Pedicels crowded or fascicled, a line and a half long; the minute bracts deciduous. *Flowers small*, a line and a half long, including the exserted stamens, *tetramerous*. Lobes of the calyx ovate, half the length of the elliptical petals, in fruit deciduous. *Glands of the disk* 8, alternating with the stamens, erect, *linear-oblong*, fleshy, truncate, *little shorter than the calyx*. Ovary ovoid, obtuse, strigose-puberulent, abruptly tipped with the *very short styles*. *Capsule nearly glabrous*, ovoid, obtuse, not 2 lines long, septicidal, few-seeded. *Seeds oblong*, anatropous; the thin testa not reticulated, conformed to the nucleus in the manner of the genus, appendaged with a loose *tuft of hairs at each end*.

The characters given by Forster and by Willdenow differ considerably, but each accords with different specimens in our collection; the species being almost as polymorphous in foliage as is the allied *W. sylvicola* of New Zealand. Don assigned the habitat of New Zealand to this species; and his description is not a good one: but the original specimen before him was from Tahiti, and is only in flower. If he had ripe seeds to examine, the tufts of hairs could hardly escape notice.

PLATE 85, *A*.—WEINMANNIA PARVIFLORA. Fig. 1. A flower. 2. Vertical section of the same. 3. A capsule with the persistent styles. 4. A seed. 5. Vertical section of the same.—Magnified.

4. WEINMANNIA AFFINIS, Sp. Nov.

W. glabra; foliis simplicibus oblongis seu ovalibus calloso-serratis basi in petiolum brevem contractis rarissime bifoliolatis, foliolis in petiolo superne marginato sessilibus; racemis geminis ternisve corymboso-paniculatis; "floribus roseis;" calyce deciduo; stylis capsula ovoidea glabella dimidio brevioribus; seminibus ovalibus utrinque comosis.

Var. *β. foliis trifoliolatis; foliolis basi attenuatis plerumque petiolulatis.*

HAB. Feejee Islands: on the mountains of Ovolau, at the altitude of 1,200 feet. (Samoan Islands?)

A shrub or small tree, *glabrous*, except a fine microscopic pubescence on the rhachis of the inflorescence and the pedicels. *Leaves mostly simple, oblong*, from 1½ to 4 inches long, an inch or more in width, sometimes elliptical or *oval*, rather coriaceous, usually punctate with brown dots underneath, perfectly glabrous, obtuse or obtusely acuminate, obtusely *callose-serrate*, abruptly narrowed into a *short margined petiole* (of 3 to 5 lines in length), apparently not lucid. In one instance the petiole, becoming two-thirds of an inch in length and *broadly margined above, bears a pair of sessile leaflets*, otherwise resembling the leaves, articulated with its summit. In var. β., of which there is only an imperfect specimen, all the *leaflets are in threes* and more or less *petiolulate*. Stipules deciduous, only seen on a shoot of var. β., where they are oblong-ovate. "Flowers rose-colour," according to Dr. Pickering's memoranda, if rightly identified, but all the specimens are in fruit. *Racemes* terminal and from the upper axils, usually *in pairs or threes* on a flattened common peduncle, and accumulated so as to form a kind of corymb, 2 or 3 inches long in fruit, very dense; the pedicels crowded or fascicled, only a line long. *Calyx deciduous* from the fruit, four-parted. *Capsule ovoid, obtuse*, 1½ to 2 lines long, minutely puberulent under a lens, but glabrous to the naked eye, two-valved, few-seeded, *twice the length of the short styles*. *Seeds* oval, glabrous, except the conspicuous *tuft of long hairs at each end*.

This species (of which the flowers are still a desideratum) is allied on the one hand to *W. parviflora*, which has still shorter styles and more pubescence; on the other to the New Zealand species, which have elongated styles and (at least *W. sylvicola*) the perfect seeds hairy all over, though most so at the extremities.—There is a miserable fruiting specimen, ticketed as from the Samoan Islands (perhaps by some transposition), which I am uncertain whether to refer to the present species, or to *W. parviflora*. Its styles, however, are rather longer than in the plant of Tahiti.

5. WEINMANNIA RICHII, Sp. Nov. (Tab. 85.)

W. arborescens; ramulis junioribus petiolis costisque subtus pube brevi velutinis cinereisve; foliolis uni-quadrijugis cum impari oblongis *acuminatis subserratis glabris; stipulis orbiculatis integerrimis; racemis geminis vel ternis confertis; floribus tetrameris parvis; petalis obovatis calyce persistente duplo longioribus; stylis gracilibus capsula di–tetrasperma paullo brevioribus; seminibus oblongis utrinque comosis.*

HAB. Feejee Islands: on mountains at Sandalwood Bay, Vanualevu, at the altitude of 2,000 feet.

An *arborescent* species; the *younger branches, petioles, and midrib of the leaflets underneath* clothed with a soft and *fine, cinereous-velvety pubescence*, which is to a good degree persistent. Leaves all pinnate. *Leaflets* from 3 to 9 on the same branch *oblong* or elliptical, on sterile shoots verging to oblong-lanceolate, *serrate with small teeth, acuminate, glabrous* (except the midrib), inconspicuously veiny, lucid above, not punctate, acute or pointed at the base, sessile or slightly petiolulate, 1½ to 2½ inches long. Petiole terete, not margined. *Stipules orbicular, entire,* half an inch in diameter, tardily deciduous. Inflorescence minutely pubescent. The specimens all in fruit, but with some vestiges of the floral organs remaining. *Racemes in pairs or threes* from the uppermost axils, and terminal, numerous and *crowded* so as to appear paniculate-corymbose, very densely-flowered, 2 or 3 inches long in fruit; the pedicels barely a line long. *Calyx* glabrous, four-parted, *persistent* in fruit. *Petals obovate, twice the length* of the calyx, about a quarter of a line long, white. Glands of the disk 8, oblong-linear, alternate with the stamens. Ovary minutely pubescent, two-celled: ovules 2 to 6 (usually 4) in each cell, anatropous. Capsule ovoid-fusiform, minutely pubescent under a lens, barely a line and a half in length; the *slender styles* fully a line long. *Seeds solitary or* often in pairs *in each cell, oblong,* anatropous, marked with a slender complete, rhaphe, *comose at each end:* the testa otherwise glabrous or nearly so at maturity, not reticulated. Embryo clavate-cylindrical, nearly as long as the albumen. Cotyledons thick, oblong, shorter than the radicle.

This species is closely related to *Weinmannia Arnoldia,* viz., the *Arnoldia pinnata* of Blume (of which I possess a flowering specimen), and perhaps scarcely less so to *W. Blumei* (*Arnoldia heterophylla,* Blume). Hasskarl, in his Pl. Jav. Rariores, p. 324, has justly remarked that the ovules in *Arnoldia* are not solitary, but several in each cell. The seeds are not described, but they will doubtless accord, as *A. pinnata* does in all other respects, with *Weinmannia*. Perhaps that species and the present, in which the seeds are abortive in many specimens, are polygamo-diœcious, in the manner of *Astilbe*, &c.

PLATE 85, *B.*—WEINMANNIA RICHII: branchlets, of the natural size. Fig. 1. A flower; the ovary already fructified. 2. A petal. 3. Vertical section of fig. 1. 4. Calyx, with the glands of the disk. 5. Dehiscent capsule. 6. Transverse section of the capsule, before dehiscence. 7. A half-grown seed. 8. A mature seed. 9. Vertical section of the same. 10. Embryo.—The details variously magnified.

6. WEINMANNIA SPIRÆOIDES, Sp. Nov.

W. arborea, hirto-pubescens; foliolis bijugis cum impari oblongo-lanceolatis seu elliptico-oblongis grosse serratis utrinque acutis; stipulis orbiculatis serratis.

HAB. Feejee Islands; on Ovolau, at the altitude of 500 feet.

"A small tree;" of which only a sterile branch was collected. This, as well as the petioles and costa beneath, is *hirsute-pubescent*. Leaves all pinnately *quinquefoliolate*, somewhat resembling those of *Spiræa sorbifolia*, membranaceous. *Leaflets oblong-lanceolate, acute at both ends*, subsessile, an inch or an inch and a half in length, or the terminal larger, *oblong-elliptical* and petiolulate, all sharply and *coarsely serrate*, pubescent when young, the upper surface glabrate. *Stipules orbicular, serrate*, 4 or 5 lines broad, rather persistent.

7. WEINMANNIA SAMOENSIS, Sp. Nov.

W. fruticosa; ramulis petiolisque hirto-pubescentibus; foliolis uni–trijugis cum impari lanceolatis acuminatis obsolete serratis glabris; racemis sæpissime ternis; calyce quadripartito deciduo; capsula glabra stylis brevissimis apiculata; seminibus utrinque comosis.

Hab. Samoan or Navigators' Islands; on the mountains of Tutuila, at the altitude of 2,500 feet.

The specimens only bear mature and dehiscent fruit. They are said to belong to a *shrub*, of 6 or 10 feet in height. The slender *branchlets and petioles are hirsute-pubescent*, as are the main peduncles, and there are traces of a slight hairiness on the midrib of the leaflets underneath. The stipules have fallen. Leaves all pinnately compound, and 5–7-foliolate or sometimes trifoliolate; the rhachis terete below, but somewhat margined between the upper pairs of leaflets. *Leaflets lanceolate*, 2 or 3 inches long, 5 to 9 lines wide, more or less *acuminate, obsoletely serrate*, sessile, or the terminal one somewhat petiolulate, *glabrous*, dotted underneath, chartaceous in texture, rather dull. Peduncles terminal, short, usually bearing the virgate *racemes in threes*, sometimes in fives. These in fruit are 2 or 3 inches long, slender but dense, and spreading, puberulent. Pedicels crowded and fascicled, a line long. The vestiges of the flower show a four-parted *calyx, deciduous* from the fruit, and 8 slender glands of the disk. Petals and stamens not seen. *Capsule glabrous* or nearly so, ovoid, a line and a half long, *apiculate* with 2 *very short styles* (of barely half a line in length), septicidal; the valves at length falling away from the persistent axis, which is dilated above into a thin lanceolate appendage. *Seeds* oblong, several in each cell, *comose at each end.*

8. GEISSOIS, *Labill.*

Char. auctus. *Calyx profunde quadripartitus, demum deciduus, æstivatione valvatus. Corolla nulla. Stamina* 10–15 (*vel* 16?), *basi disci hypogyni inserta: filamenta filiformia, elongata: antheræ didymæ, biloculares, loculis longitudinaliter dehiscentibus. Ovarium liberum, conoideo-oblongum, biloculare: ovula plurima, biseriata, in placentis bipartitis sursum imbricata, anatropa. Styli* 2, *filiformes, basi connati, decidui: stigmata simplicia terminalia. Capsula lineari-oblonga, coriacea, bilocularis, ab apice septicide bivalvis. Semina indefinita, complanata, adscendentia, imbricata; testa membranacea reticulata sursum alata. Embryo in axi albuminis carnosi rectus, ejusdem fere longitudine; cotyledonibus ovalibus subfoliaceis;*

radicula infera.—Arbores Polynesicæ; trunco crasso; stipulis interpetiolaribus; foliis digitatis tri–quinquefoliolatis; floribus purpureis; racemis lateralibus.

GEISSOIS, Labill. Sert. Austro-Cal. p. 50, t. 50; Endl. Gen. p. 819.

1. GEISSOIS TERNATA, Sp. Nov. (Tab. 86.)

G. foliis trifoliolatis; ovario glabro; staminibus sæpissime 14 *vel* 15.

HAB. Feejee Islands; common on the mountains of Muthuata and Ovolau, between the altitudes of 500 and 2,000 feet.

"Tree 30 or 40 feet high, with a trunk of 2 feet in diameter;" the branches terete, nodose; the branchlets petioles, &c., minutely silky-puberulent when young. *Leaves trifoliolate,* opposite, on petioles from half an inch to an inch long. Leaflets oblong or obovate-elliptical, obtuse, acutish, or a little pointed at both ends, entire, glabrous, chartaceous in texture in the dried specimens, from 2 to 5 inches long, pinnately veined: the partial petioles 3 to 5 lines in length. Stipules interpetiolar, canescently hirsute in the bud, in this state apparently not costate, caducous, all the developed ones having disappeared. Racemes lateral, solitary from the axils above the scars whence the leaves of the previous season have fallen, or even from older wood, spreading, many-flowered. Pedicels 2 or 3 lines long, scattered, subtended by small and subulate caducous bractlets. Flower-buds nearly 3 lines long, ovoid, glabrous. Calyx four-parted nearly to the base; the segments triangular-oblong, acutish, thickish, valvate in æstivation, spreading in anthesis, purplish-red, somewhat pubescent inside, tardily deciduous. Corolla none. *Stamens* 14 *or* 15 in most specimens examined, sometimes 12, or perhaps fewer, inserted at the base of a thickened and entire gynobasic disk just at its junction with the base or origin of the calyx, therefore obscurely perigynous: filaments filiform, thickish towards the base, half an inch long, thrice the length of the calyx, deep red, deciduous: anthers didymous, fixed by the middle, incumbent, two-celled, destitute of a manifest connective; the cells opening longitudinally. Grains of pollen globose, simple. *Ovary* free, conoidal-oblong, *glabrous,* terete, two-celled; the axile placentæ occupying the whole length of the cell, two-lobed; the divergent lobes each bearing a dense row of ascending, anatropous, compressed, and upwardly winged ovules. Styles 2, filiform, equalling the filaments and of the same colour, somewhat united at the base, deciduous: stigmas terminal, simple, obtuse or subcapitate. Capsule linear-oblong, often curved, an inch or less in length, terete, or obscurely compressed contrary to the dissepiment, two-grooved, not ribbed, minutely apiculate, two-celled, septicidally two-valved from the apex; the valves coriaceous, at length separating from the bipartible placenta. Seeds numerous in each cell, 2 lines long, flat, oblong, upwardly imbricated; the testa membranaceous, reticulated-cellular, loose, extended especially above into a broad wing much larger than the nucleus, which is oblique, as respects the axis of the wing. Embryo nearly the length of the fleshy albumen, and occupying its axis. Cotyledons oval, flat, nearly foliaceous, longer than the inferior radicle.

This is evidently a very close congener of *Geissois racemosa*, Labill., and it may prove to be no more than a form of that species. But the leaves are all trifoliolate; the flowers are brightly coloured and showy; the ovary glabrous; the capsule is not compressed nor ribbed as in Labillardiere's figure; and the stamens, in all the flowers I have examined, are more than ten, the number assigned by Labillardiere to the New Caledonian species. Ten is an anomalous number for a flower with a tetraphyllous calyx, and requires confirmation. In a coloured drawing of the present species, made from the recent plant by the late Mr. Agate, the equally anomalous number of nine stamens is given to each flower, but I have found none with less than twelve in the dried specimens. The seeds show no traces of the gummy matter mentioned by Labillardiere.—The genus is rightly placed by Endlicher next to *Belangera*.

PLATE 86.—GEISSOIS TERNATA: in flower and fruit, of the natural size. Fig. 1. Transverse section of a flower-bud. 2. Expanded flower. 3. Anthers. 4. Pistil and disk. 5. Vertical section of the same. 6. An ovule. 7. Transverse section of a capsule. 8. Dehiscent capsule. 9. A seed. 10. The same, with the nucleus divided to show the embryo. 11. Transverse section through the embryo.—The details variously magnified.

9. BELANGERA, *Camb.*

1. BELANGERA SPECIOSA, *Camb.*

Belangera speciosa, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 206, t. 117; DC. Prodr. 4, p. 11.
Polystemon pentaphyllus, Don, in Edinb. New Phil. Jour. 9, p. 95.
Lamanonia ternata, Velloz. Fl. Flum. 5, t. 104.

HAB. Brazil; not uncommon near Rio Janeiro, and on the Organ Mountains.

10. BAUERA, *Kenn.*

1. BAUERA RUBIOIDES, *Andr.*

Bauera rubioides, Andr. Bot. Rep. t. 198; Vent. Hort. Malm. t. 96; DC. Prodr. 4, p. 13.
B. rubiæfolia, Salisb. in Ann. Bot. 1, p. 514, t. 10.

HAB. New South Wales, near Sydney.

2. BAUERA MICROPHYLLA, *Sieber.*

Bauera microphylla, Sieber, Pl. Exsic. N. Holl. no. 286; Seringe, in DC. l. c.

HAB. With the preceding species.

11. BROUSSAISIA, *Gaud.*

Char. emend. et auct. *Flores polygamo-dioici.* Mas.—*Calyx brevis, liber, quinquepartitus, lobis triangulatis seu ovato-lanceolatis. Petala*

5, *imo calyci inserta, eodem majore, oblonga, æstivatione valvata, acumine inflexo, decidua. Stamina* 10, *cum petalis inserta: filamenta crassa subulata: antheræ ovatæ, biloculares, longitudinaliter dehiscentes. Pistillum fere floris fœminei nisi stigma imperfectum, ovula abortiva.* Fœm.—*Calyx tubo ovoideo cum ovario connato, limbo quinquedentato supero vel semisupero, persistente. Petala parva, squamæformia, persistentia. Stamina nulla? Ovarium ovoideum, quinqueloculare: placentæ crassæ, e loculorum angulo centrali (ubi vix coalitæ) porrectæ, bipartitæ, multiovulatæ. Stylus brevis vel subnullus: stigma crassum, radiato-quinquelobum. Fructus baccatus, pleiospermus. Semina horizontalia, oblonga, anatropa; testa membranacea parce striato-reticulata nucleo conformi. Embryo in axi albuminis carnosi cylindricus, eodem dimidio brevior; cotyledonibus brevissimis.—Arbusculæ Sandwicenses; ramis validis; foliis oppositis seu verticillatis exstipulatis oblongis calloso-serratis, petiolis basi incrassatis; cymis terminalibus sessilibus multifloris.*

Broussaisia, Gaud. Bot. Voy. Freyc. p. 479, t. 69 (pl. masc. tantum); DC. Prodr. 4, p. 17.

The materials in the present collection fortunately enable me nearly to complete the characters of this interesting Hydrangeaceous genus, and to demonstrate its real relationship to *Adamia* of Java and Nepaul; which appeared very doubtful while *Broussaisia* was supposed to have hypogynous stamens as well as a free ovary. But what Gaudichaud, and subsequently Hooker and Arnott (the only botanists who have hitherto examined *Broussaisia*) took for hermaphrodite flowers are in fact male flowers; the ovary, although seemingly well-formed, containing only abortive ovules. Figure 7 of Gaudichaud's plate, above-cited, does indeed represent a great number of apparently good ovules in each cell; but his character, "*ovula* 1 *vel* 6 (*constanter* 6?) *in quolibet loculo*," shows that in the flowers he examined, as in our own, the ovules were for the most part rudimentary. Those few even that are somewhat developed are doubtless infertile. Moreover, the stamens and petals are perigynous, the base of the calyx being adnate to the very base of the ovary. The actual female flowers, indeed, are still desiderata: but we possess very young fruit still bearing apparently all the organs of the flower (unless there were stamens which have fallen away, leaving no trace), and with the calyx adnate nearly to the summit of the ovary, as in the other genera of this tribe.*

There is something in the foliage, and in the strigose pubescence of the young parts in *Broussaisia* that reminds one of *Saurauja* and *Draytonia* (p. 206): the placentæ and the seeds are much alike, and the former abound in both with acicular raphides. The stamens and petals of *Draytonia*, moreover, are slightly perigynous. Although the *Sauraujeæ* are doubtless not to be approximated to the *Hydrangieæ* on such grounds, yet they appear to be quite as much related to them as to the *Dilleniaceæ*, or even to *Clethra*.

1. BROUSSAISIA ARGUTA, *Gaud.* (Tab. 87.)

B. foliis oppositis obovato-oblongis; dentibus calycis fructiferi oblongis superis stylo manifesto fere vel paullo brevioribus.

Broussaisia arguta, Gaud. l. c. (& Bot. Voy. Bonite, t. 9, f. 11, 12?); DC. l. c.; Hook. & Arn. Bot. Beech. Voy. p. 84.

HAB. Sandwich Islands; Oahu; common on the mountains behind Honolulu.

A large shrub, or small tree, with stout branches marked with very large leaf-scars, when young hirsute, as is the inflorescence, with strigose hairs, at length glabrate; the pith large. *Leaves opposite, obovate-oblong*, 4 to 6 inches long, usually pointed with a slight acumination, closely serrate with fine and incurved callous teeth, tapering at the base into the petiole, nearly coriaceous, thickly feather-veined from the stout midrib, and the veins connected by a multitude of transverse veinlets, glabrous above, the midrib and veins beneath strigosely hirsute, especially when young. Petiole 6 to 18 lines long, hirsute when young, stout, margined, channeled above, remarkably dilated and tumid at the insertion, the scar left by its fall 3 lines or more in diameter. Stipules none. Leaf-buds naked. Inflorescence terminal, forming a nearly sessile and crowded compound cyme, its lower primary divisions subtended by rather large foliaceous bracts, the larger about an inch in length, and resembling the leaves, but mostly sessile. Pedicels from one to 3 lines long. Bractlets minute and caducous. Flowers polygamo-diœcious. *Male flowers.*—Flower-buds between 2 and 3 lines in diameter, globular. Calyx five-parted; its divisions triangular or triangular-lanceolate, acute, equal, distant in æstivation in the full-grown flower-bud, much smaller than the petals, and about half their length. Petals 5, distinct, ovate or oblong, thickish, glabrous or nearly so, apparently greenish-white, about 3 lines long and widely spreading when expanded, inserted by a broad base into the base of the calyx, valvate in æstivation, and with a conspicuous inflexed acumination. Stamens 10, inserted with the petals, nearly equal: filaments about the length of the corolla, subulate, rather stout, dilated at the base, distinct: anthers ovate or subcordate, two-celled, fixed by the base, somewhat introrse; the cells opening longitudinally. Pollen-grains simple, globular, smooth. Ovary ovoid or globose-ovate, free from the calyx except its very base, contracted at the apex into a very short and thick style, which is terminated by a depressed, undivided, apparently imperfect stigma; within five-celled; the thick and spongy placentæ meeting but scarcely coalescing in the centre, and bearing on their posterior faces numerous minute rudiments of ovules, a few of which are more or less developed, but apparently sterile. *Female flowers* seen only in a fructified state. Calyx-tube ovoid, connate with the ovary nearly or quite to its summit; the limb divided into 5 *oblong superior teeth* of about a line in length and persistent. Within and alternating with these teeth are 5 shorter, but otherwise nearly similar, thickish, equally persistent, scale-like lobes, which evidently answer to the petals: whether they were more developed in anthesis is doubtful: they seem to be complete. No vestiges of stamens or marks of their insertion are to be found. *Style conspicuous*, in the fruit *somewhat exceeding the calyx-teeth*, a line and a half long, columnar, terminated by a large, obtusely and radiately five-lobed stigma. Fruit fleshy or baccate, glabrous, smooth, globular, 3 lines in diameter (its colour not recorded), conspicuously pointed with the persistent style and stigma, and crowned with the teeth of the calyx and the alternate petals or their vestiges, inferior, only its pointed apex free from the calyx; the pericarp five-celled, although imperfectly so, as the retroflexed placentæ are scarcely if at all united in the axis at any stage: dissepiments thin: cells alternate with the lobes of the calyx. Placentæ large, fleshy, two-parted, strongly reflexed into the cells, which they almost fill (the seeds thus brought into contact with the pericarp), their tissue replete with acicular rhaphides. The pericarp is lined with a favose layer of tissue composed of elongated-linear and somewhat separable cells, giving it a striated appearance:* this also contains an abundance of rhaphides. Seeds very numerous, horizontal, a quarter of a line long, brownish, oblong, anatropous; the testa membranaceous, coarsely striate-reticulated (the areolæ linear and longitudinal), thin, conformed to the nucleus; the rhaphe inconspicuous. Embryo cylindrical, next the hilum, half the length of the seed, in the axis of fleshy albumen: cotyledons very small.

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* Just as this manuscript was about to pass into the printer's hands, Gaudichaud's plate of *Broussaisia pellucida*, tab. 8, in the Atlas of the Voyage de la Bonite, fell under my notice;—showing that this botanist had ascertained the real characters of *Broussaisia*, on his second visit to the Sandwich Islands. No letterpress of the phanerogamic botany of this work has been published, so far as I am aware, up to the time of M. Gaudichaud's recent death.

PLATE 87.—BROUSSAISIA ARGUTA: a branch of the male plant, in flower, and of the female plant, in fruit. Fig. 1. A male flower-bud. 2. Transverse section of the same. 3. An expanded male flower. 4. Vertical section of the same. 5. A fructified female flower. 6. Vertical section of the same. 7. A fruit, with the parts of the flower persistent. 8. Transverse section of the same. 9. Portion of the pericarp, placentæ, &c., more magnified. 10. A seed, detached. 11. Vertical section of the same. 12. Embryo.—The details variously magnified.

2. BROUSSAISIA PELLUCIDA, *Gaud.*

B. foliis ternato-verticillatis oblongo-lanceolatis oblongisve elongatis; dentibus calycis fructiferi brevissimis semisuperis; stylo brevissimo conico seu nullo.

Broussaisia pellucida, Gaud. Bot. Voy. Bonite, t. 9 (excl. fig. 11, 12), sine descr.

HAB. Hawaii, Sandwich Islands, in the district of Puna; probably in woods.

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* This structure is the same as *Hydrangea*, *Schizophragma*, *Decumaria*, *Philadelphus*, &c. Vid. Torrey & Gray, Flora of North America, 1, p. 593.

The Hawaiian plant is merely mentioned in Dr. Pickering's notes, as if identical with that of Oahu. The only Hawaiian specimen in the collection,—a fertile one with half-grown fruit,—differs from those of Oahu, however, in having *elongated-oblong leaves* (6 to 8 inches in length), all of them *verticillate in threes.* The fructiferous cyme is more open; the ovoid *ovary is free at its summit;* the calyx being adnate only to a little above the middle, its inconspicuous limb there divided into 5, triangular and obtuse, appressed, *very short teeth,* which are hardly discernible without a lens. Within and alternate with these are as many similar teeth, of equal length, which represent the petals. Of stamens no vestiges are perceived. There is properly *no style;* but the tapering apex of the fructified ovary is contracted a little below the stigma; the latter accords with the preceding species, as do the placentæ, &c. Unless, therefore, *Broussaisia arguta* is more variable than could be inferred without evidence, the specimen before us must belong to a second species.—A recent comparison of our specimen with Gaudichaud's plate, cited above, leaves no doubt that it belongs to his *Broussaisia pellucida,* although the plant figured by him has longer and narrower, and (judging from the name) apparently much thinner leaves than ours, probably from growing in deep shade. Further observation must determine whether the characters assigned are constant, so as to specifically distinguish the plant from *B. arguta.* This certainly cannot be the case if Gaudichaud's figures 11 & 12, representing the fruit with a columnar style, really belong to his *B. pellucida.* The young fruit in our specimen answers to that of his figure *B.*

12. CHRYSOSPLENIUM, *Tourn.*

1. Chrysosplenium macranthum, *Hook.*

Chrysosplenium macranthum, Hook. in Lond. Jour. Bot. 1, p. 458, t. 16; Hook. f. Fl. Antarc. p. 281.

Hydrocotyle glechomoides, A. Rich. Mon. Hydrocot. t. 58, f. 17 (DC. Prodr. 4, p. 70)?

Hab. Orange Harbour, Fuegia; common on the coast.

A tender, herbaceous plant, a foot high: the leaves apparently all opposite.—This striking species is well illustrated by Sir William Hooker. Although so lately published, it was gathered long ago by Banks and Solander (and figured, under the name of *C. elevatum*, according to Dr. Hooker), and probably also by Commerson. For, on having my attention called to the point by a note of Dr. Pickering's, I think it is without much doubt the *Hydrocotyle glechomoides* of Achille Richard, although this author's account does not altogether agree with the plant.

13. SAXIFRAGA, *Linn.*

1. Saxifraga Magellanica, *Poir.*

Saxifraga Magellanica, Poir. Dict. 6, p. 686; DC. Prodr. 4, p. 25; Sternb. Rev. Sax. t. 11, f. 1.
S. exarata, var. Hook. f. Fl. Antarc. p. 280.

Hab. Orange Harbour, Fuegia; on the tops of mountains.

The collection comprises all three varieties of this Saxifrage; which Dr. Hooker unites with the northern *S. exarata*.

2. Saxifraga bicuspidata, *Hook. f.*

Saxifraga bicuspidata, Hook. f. Fl. Antarct. p. 281, t. 97.

Hab. Orange Harbour, Fuegia; on the tops of mountains; of rare occurrence.

3. Saxifraga Peruviana, *Sternb.*

Saxifraga Peruviana, Sternb. Rev. Sax. p. 55, t. 22; DC. Prodr. 4, p. 33.
S. Bonplandii, Don, Monogr. Sax. in Linn. Trans. 13, p. 431.
S. stellata, Pav.; Don. l. c. p. 430.

Hab. High Andes of Peru; on rocks, above Casa Cancha, Alpamarca, &c.

14. DONATIA, *Forst.*

1. Donatia fascicularis, *Forst.*

Donatia fascicularis, Forst. Char. Gen. p. 10, t. 5; Hook. f. Fl. Antarc. p. 281.
D. Magellanica, Lam. Ill. Gen. 1, p. 217, t. 51; DC. Prodr. 4, p. 53; Hook. Ic. Pl. t. 16.
Polycarpon Magellanicum, Linn. f. Suppl. p. 115; Forst. in Comm. Gœtt. 9, p. 23, t. 3.

Hab. Orange Harbour, Fuegia; common, forming broad and depressed, dense patches.

Ord. CRASSULACEÆ.

1. TILLÆA, *Mich.*

1. Tillæa verticillaris, *DC.*

Tillæa verticillaris, DC. Prodr. 3, p. 382; Hook. f. Fl. N. Zeal. p. 75.
T. muscosa? Forst. Prodr. Fl. Ins. Austr. p. 11; A. Rich. Fl. N. Zel. p. 322.

Hab. New South Wales, near Sydney and Hunter's River. Also Lord Auckland Islands (unless the specimens were misplaced).

2. Tillæa connata, *Ruiz & Pav.*

Tillæa connata, Ruiz & Pav. Fl. Per. & Chil. 1, p. 70, t. 106.

Hab. Andes of Peru; common on walls, &c., at and above Obrajillo.

"Plant an inch or two in height." The small specimen apparently belongs to an erect plant; with ovate-oblong, obtuse and *pointless* leaves; the floral ones as long as the fructiferous pedicels; which however do not exceed the calyx in length. So that the species is probably distinct from *T. rubescens*, H. B. K. Petals shorter than the ovate and somewhat pointed sepals. Carpels two-seeded.

3. Tillæa (Bulliarda) moschata, *DC.*

Crassula moschata, Forst. in Comm. Gœtt. 9, p. 26.
Bulliarda Magellanica, DC. in Bull. Philomath. no. 49.
B. moschata, D'Urv. in Mem. Soc. Linn. Par. 4, p. 618; Gaud. Bot. Freyc. Voy. p. 138; Hook. f. Fl. Antarc. p. 15 & 278.
Tillæa moschata, DC. Prodr. 3, p. 382; Hook. Ic. Pl. t. 535; Hook. f. Fl. N. Zeal. p. 75.

Hab. Orange Harbour, Fuegia; on rocks along the coast. Lord Auckland Islands.

2. TETRAPHYLE, *Eckl. & Zeyh.*

1. Tetraphyle muscosa, *Eckl. & Zeyh.*

Tetraphyle muscosa, Eckl. & Zeyh. Enum. Pl. Afr. Austr. p. 294.
Crassula muscosa, Linn. Spec. Pl. ed. 2, p. 405, fide Eckl. & Zeyh.

Hab. Cape of Good Hope, near Cape Town.

3. CRASSULA, *Linn., Haw.*

1. Crassula tetragona, *Linn.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

2. Crassula scabra, *Linn.*

Hab. Cape of Good Hope, in the vicinity of Cape Town.

3. Crassula squamulosa, *Willd.*

Hab. Cape of Good Hope; with the preceding species.

4. Crassula pellucida, *Linn.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

5. Crassula ciliata, *Linn.*

Hab. Cape of Good Hope, near Cape Town.

4. ROCHEA, *DC.*

1. Rochea odoratissima, *DC.*

Hab. Cape of Good Hope, in the immediate vicinity of Cape Town.

5. KALANCHOE, *Adans.*

1. Kalanchoe Brasiliensis, *Camb.*

Kalanchoe Brasiliensis, Cambess. in St. Hil. Fl. Bras. Mer. 2, p. 196.

Hab. Rio Janeiro; common on rocks along the shore of the bay.

6. BRYOPHYLLUM, *Salisb.*

1. Bryophyllum calycinum, *Salisb.*

Hab. Philippine Islands, in the vicinity of Baños, Luzon.

7. UMBILICUS, *DC.*

1. Umbilicus pendulinus, *DC.*

Hab. Madeira; on the summit of Pico Ruivo.

8. SEDUM, *Linn.*

1. Sedum nudum, *Ait.*

Hab. Madeira; along the coast east of Funchal.

2. Sedum Peruvianum, Sp. Nov.

S. glabrum, pumilum; caulibus adscendentibus; foliis sessilibus ovatis oblongisve planis; cyma pauciflora subracemiformi; petalis (ut videtur albis) ovatis acuminatis.

Hab. Andes of Peru, from Obrajillo to Culnai; on rocks.

The specimens in the collection are extremely meagre and imperfect. There is also one from the same region in the Hookerian herbarium, gathered probably by Matthews or M'Lean. The root is most likely annual. *Stems ascending, low* (3 or 4 inches high), fleshy, *glabrous*, as is the whole plant. Cauline *leaves sessile*, scattered, *ovate or oblong*, plane, but very fleshy, small. Flowers few, *racemose-cymose;* the terminal one sessile, the others short-pedicelled. Sepals 5, ovate-lanceolate, somewhat carinate. *Petals ovate* or broadly oval-obovate, *acuminate*, nearly 3 lines long, one-third longer than the calyx, carinate, one-nerved, scarious-persistent, *apparently white.* Stamens 10. Carpels ovate, many-seeded.

ORD. UMBELLIFERÆ.

1. HYDROCOTYLE, *Tourn.*

1. HYDROCOTYLE INTERRUPTA, *Muhl.*

HAB. Sandwich Islands: Oahu; in marshes, near Honolulu. Hawaii, in the district of Waimea.

This was also collected in Beechey's voyage. It accords in all respects with the plant of the United States: but the fruit, although not emarginate, is by no means *subattenuate* at the base. I have seen no specimens from the Pacific coast of North America: an allied species, more nearly related to *H. vulgaris* however, is found in California and Western Mexico.

2. HYDROCOTYLE MODESTA, *Cham. & Schlecht.*

HAB. Peru, near Callao. A monstrous state; the umbels foliose-proliferous.

3. HYDROCOTYLE BONARIENSIS, *Lam.*

HAB. Brazil, near Rio Janeiro. Callao, Peru. The many-flowered form: *H. multiflora*, Ruiz & Pav.

4. HYDROCOTYLE QUINQUELOBA, *Ruiz & Pav.*

HAB. Brazil; in the Organ Mountains.

5. Hydrocotyle leucocephala, *Cham. & Schlecht.*

Hab. Brazil, near Rio Janeiro. Also, Savaii, one of the Samoan Islands.

6. Hydrocotyle laxiflora, *DC.*

Hab. New South Wales; in the neighbourhood of Hunter's River.

7. Hydrocotyle Asiatica, *Linn.*

Hab. Luzon, near Manilla. Hunter's River, New South Wales. Ovolau, Feejee Islands; around houses. Tongatabu. Savaii, one of the Samoan Islands; "only seen around houses." Bay of Islands, New Zealand (the ordinary plant, and a diminutive state, with the leaves only 4 or 5 lines in diameter). Brazil, near Rio Janeiro.

8. Hydrocotyle ranunculoides, *Linn. f.*

Hab. Chili, near Valparaiso. Without flowers or fruit. Apparently also the *H. batrachioides*, DC.

9. Hydrocotyle plebeia, *R. Br.*

Hab. New South Wales; in the vicinity of Hunter's River.

10. Hydrocotyle hirta, *R. Br.*

Hab. New South Wales, near Sydney.

11. Hydrocotyle elongata, *A. Cunn.*

Hydrocotyle elongata, A. Cunn. Bot. N. Zeal.; Hook. f. Fl. N. Zeal. p. 84.

Hab. Bay of Islands, New Zealand.

12. Hydrocotyle microphylla, *A. Cunn. l. c.*

Hab. Bay of Islands, New Zealand.

13. Hydrocotyle peduncularis, *R. Br.*

Hab. New South Wales, near Sydney. (The var. γ. Hook. f.)

2. DIDISCUS, *DC.*

1. Didiscus albiflorus, *DC.*

Hab. New South Wales; near Sydney, and on Hunter's River.

3. TRACHYMENE, *Rudge.*

1. Trachymene ovalis, *DC.*

Hab. New South Wales, near Sydney: also (a variety with the stem almost glabrous) on Cook's River.

2. Trachymene myrtifolia, *Sieber.*

Hab. New South Wales; with the preceding species, which probably is only a variety of this.

3. Trachymene lanceolata, *Rudge.*

Trachymene lanceolata, Rudge, in Linn. Trans. 10, p. 300; DC. l. c.; Hook. Bot. Mag. t. 3334.
Azorella lanceolata, Labill. Fl. N. Holl. 1, p. 74, t. 99.

Hab. New South Wales; in the vicinity of Sydney and Newington.

4. Trachymene linearis, *Spreng.*

Trachymene linearis, Spreng.; DC. Prodr. 4, p. 73.
Azorella linearifolia, Cav. Ic. Pl. 5, p. 485.

Hab. New South Wales; in the vicinity of Sydney.

5. Trachymene ericoides, *Sieber.*

Hab. Sydney, Newington, and Hunter's River, New South Wales.

The stems are mostly puberulent, and the leaves often puberulent-scabrous. The species apparently includes both *T. subvelutina* and *T. tenuis*, of DeCandolle.

4. ASTROTRICHE, *DC.*

1. Astrotriche latifolia, *Benth.*

Astrotriche latifolia, Benth. Pl. Hugel. p. 55.

Hab. New South Wales; probably from the neighbourhood of Sydney or Hunter's River.

5. XANTHOSIA, *Rudge.*

1. Xanthosia pilosa, *Rudge.*

Xanthosia pilosa, Rudge, in Linn. Trans. 5, p. 361; Benth. Pl. Hugel. p. 55.
X. hirsuta, DC. Prodr. 4, p. 74.

Hab. New South Wales; near Sydney and Woolongong: one form in foliage approaching *Leucolæna pannosa*, Benth. l. c.; the other remarkably barbate-villous.

2. XANTHOSIA MONTANA, *Sieber, in DC. l. c.*

HAB. New South Wales; in the neighbourhood of Sydney.

3. XANTHOSIA TRIDENTATA, *DC. l. c.*

HAB. Near Sydney, New South Wales.

6. BOWLESIA, *Ruiz & Pav.*

1. BOWLESIA TROPÆOLIFOLIA, *Gillies.*

Bowlesia tropæolifolia, Gillies, in Hook. Bot. Misc. 1, p. 325; Gay, Fl. Chil. 3, p. 75.

HAB. Chili; on the Cordilleras above Santiago. Near *B. tenera.*[*]

2. BOWLESIA LOBATA, *Ruiz & Pav.*

Bowlesia lobata, Ruiz & Pav. Fl. Per. & Chil. t. 251; DC. Prodr. 4, p. 75.
B. acutangula, Benth. Pl. Hartw. p. 186.

HAB. Andes of Peru, near Obrajillo. (Lobes of the leaves acutish.)

3. BOWLESIA PALMATA, *Ruiz & Pav. l. c.*

Var. *β. fructu nunc nudato parce stelligero, nunc setis glochidatis hispido!*

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[*] *Elsneria cratægifolia*, Walp. in Rel. Meyen. p. 346, t. 7, appears to be the *Bowlesia dichotoma*, Pœpp., to which *B. multiradiata*, Colla, and *B. elata*, Clos, may also belong.

Hab. Andes of Peru, in the neighbourhood of Obrajillo.

This appears to be the *B. palmata* of Ruiz and Pavon. In one specimen the fruit is mostly glabrate, when young sparingly beset with sessile stellate tufts of short hairs: occasionally one or more of these tufts are raised on a short pedicel or bristle; while in another, otherwise similar specimen the fruits are rather copiously beset with such glochidiate bristles, often of considerable length. From the forks of the stem, there is occasionally produced an abnormal fusiform body, appearing like a diseased fruit, either subsessile or long-peduncled, 4 or 5 lines long, and armed all over with long glochidiate bristles.

7. AZORELLA, *Lam.*

Azorella, Lam. Ill. Gen. t. 484, f. 1; Cav. Ic. t. 482, f. 2; DC. Prodr. 4, p. 77.
Bolax, Commers.; Juss. Gen. p. 226; DC. Prodr. 2, p. 78; Spreng. Umb. p. 33.
Fragosa, Ruiz & Pav. Fl. Peruv. & Chil. Prodr. p. 43.
Chamitis, Banks & Soland. ined.; Gærtn. Fruct. 1, p. 94, t. 22.
Pectophytum, H. B. K. Nov. Gen & Spec. 5, p. 28, t. 425.
Pozoa, subgen. Schizeilema, Hook. Fl. Antarc. p. 15, t. 11, & Fl. N. Zeal. p. 85, t. 18.

It appears to me that Sprengel was quite right in uniting *Bolax* and *Azorella*, both names probably imposed by Commerson, but the latter first published. The types of the two genera were also viewed as one (*Chamitis*) by Banks and Solander, as also by Cavanilles. Their habit is the same: *A. Selago*, indeed, closely resembles *Bolax glebaria;* and the difference in their fruit is perhaps not greater than between some species of *Azorella* proper. Moreover, an Andine Chilian species (*A. madreporica*), having the thickened margins of the mericarps more or less recurved, often as much so as in some fruits of *Bolax glebaria*, manifestly combines the two genera. The entire absence of teeth to the calyx will barely distinguish *Pectophytum*, H. B. K., as a section of this genus; the limb being obsolete in *Bolax*. Dr. Hooker has fully noticed the similarity of the fruit of his *Pozoa*, subgen. *Schizeilema* to *Azorella*, and has until lately retained *A. Ranunculus* in this genus: in finally excluding it, and referring it, along with two kindred species, to *Pozoa*, he has been guided principally by habit; yet in this these plants do not widely differ from some Peruvian *Fragosæ*. Moreover if *Pozoa* itself may not be distinguished by its striking crateriform gamophyllous involucre, and its monœcious flowers, it may also fall into *Azorella*.

§ 1. SCHIZEILEMA. (*Pozoa*, subgen. *Schizeilema*, Hook. f. l. c.)

1. Azorella Ranunculus, *D'Urv.*

Azorella Ranunculus, D'Urv. in Mem. Soc. Linn. Par. 4, p. 614; Gaud. Bot. Voy. Freyc. p. 136; DC. Prodr. 4, p. 77; Hook. f. Fl. Antarc. p. 285, t. 98.
Pozoa (*Schizeilema*) *Ranunculus*, Hook. f. Fl. N. Zeal. p. 85, adn.

Hab. Orange Harbour, Fuegia.

The mature fruit is more didymous than in Dr. Hooker's otherwise perfect figure. The other species of the group are *A. reniformis*, of the Auckland and Campbell Islands, and *A. trifoliolata*, Hook. f. (in tab. supra cit.), of New Zealand. In habit they much resemble *Hydrocotyle*.

§ 2. CHAMITIS. (*Chamitis*, Banks & Soland. excl. spec., Gærtn. *Azorella*, Lam., DC.)

2. Azorella filamentosa, *Lam.*

Azorella filamentosa, Lam. Dict. 1, p. 344, & Ill. Gen. t. 189; DC. Prodr. 4, p. 77; Hook. Ic. Pl. t. 451; Hook. f. Fl. Antarc. p. 283.
Chamitis integrifolia (Banks & Soland.) Gærtn. Fruct. I, p. 94, t. 22.

Hab. Orange Harbour, Fuegia; on the mountains.

3. Azorella lycopodioides, *Gaud.*

Azorella lycopodioides, Gaud. in Ann. Sci. Nat. 5, p. 105, t. 3; DC. l. c.; Hook f. Fl. Antarc. p. 284.

Hab. Orange Harbour, Fuegia; on the tops of mountains.

4. AZORELLA SELAGO, *Hook. f.*

Azorella Selago, Hook. f. Fl. Antarc. p. 284, t. 99.

HAB. Orange Harbour, Fuegia; on the tops of mountains.

5. AZORELLA MONANTHOS, *Clos?*

Azorella monanthos, Clos, in Gay, Fl. Chil. 3, p. 79?

HAB. On the Andes of Chili, above Santiago. (Without flowers or fruit.)

6. AZORELLA APODA, Sp. Nov.

A. *dense cæspitosa; foliis arctissime imbricatis basi vaginantibus apice subspatulato crassis triangulato-subulatis pungenti-mucronulatis glabris, floralibus basi filamentosis; umbella bi–quadriflora sessili; floribus fructibusque subsessilibus folia haud superantibus; calyce glaberrimo, dentibus brevissimis obtusis; mericarpiis utriculosis dorso subcompressis.*

HAB. Andes of Chili, above Santiago, not far from the snow-line.

The plant forms very *compact tufts*, from an inch to 3 inches high; the stems (2 or 3 lines thick) covered with *very densely imbricated leaves*, with appressed sheathing bases; their upper and slightly dilated portion, or limb, *triangular-subulate*, or oblong, 1½ or 2 lines in length, *glabrous, very thick*, mostly obtuse, but *pungently mucronulate;* those next the flowers filamentose at the base inside. Involucre of 2 to 4 small and scarious leaves, their dilated bases somewhat united and filamentose. *Umbel sessile* even in fruit, of 2 to 4 rather large flowers; the pedicels very short, not so long as the ovary, so that the *flowers* are *not protruded beyond the leaves*, but barely equal them in length. *Calyx-tube wholly glabrous*, utricular; the 5 *teeth very short and obtuse*, persistent. Petals oblong, plane. Stylopodium large.

Styles elongated. Only one flower of each umbel usually fructifies. *Fruit* not exceeding the leaves at the summit of the shoot, turgid, globular, but *dorsally somewhat compressed*, 2 lines long, *utricular* (as in *A. Gilliesii*), the entirely loose and membranaceous epicarp smooth and free from ribs or markings: on detaching the membrane, however, the five filiform ribs are seen on the body of the compressed mericarp, three on the back and one on each margin. Vittæ none.

This can hardly be any state of *Azorella cæspitosa* of Cavanilles, which is described and figured as having, at least in the fruiting state, a conspicuously exserted peduncle and slender pedicels, as well as squarrose-spreading leaves. It is much more like the Antarctic plant, however, as described by Dr. Hooker under this name; but that is said to have the calyx-tube hairy; and Dr. Hooker would scarcely fail to mention the utricular character, which is manifest even in the immature fruit. Moreover the leaves of our plant are appressed, rather than spreading.

§ 3. BOLAX. (*Bolax*, Commerson, DC., Hook. f.)

7. AZORELLA MADREPORICA, *Clos.*

A. caulibus multicipitibus in cæspitem densum depressum cohærentibus; petiolis densissime imbricatis appressis oblongis planis aut truncatis aut superioribus lamina brevissima tripartita intus filamentoso-barbata donatis, in ramis sterilibus petiolis nunc elongatis patentibus lamina bis trifida majoribus; umbella subsessili 2–5-flora; involucro 4–5-phyllo scarioso pedicellis æquilongo; floribus fructibusque ultra folia vix exsertis; calyce glabro, dentibus oblongis persistentibus; fructu quadrilobo, mericarpiis obovato-orbiculatis plano-compressis marginibus incrassatis pl. m. recurvis inde dorso concavis.

Azorella madreporica, Clos, in Gay, Fl. Chil. 3, p. 79.

HAB. Chili; on the high Andes, above Santiago, near the snow-line.

Plant growing in extremely *dense and depressed tufts*, consisting of numerous compactly matted stems, an inch or two in length, from a thick and perpendicular root, clothed with dilated and *appressed, densely imbricated petioles*. Many of these are destitute of lamina: towards the summit of the stems, however, they usually bear a *very small and three-parted lamina*, which is *bearded inside*, at least when young, either sparsely or copiously, with long and *filamentous bristles;* its segments ovate and entire. From the summit of some of these stems, when sterile, arise more or less open shoots, bearing spreading leaves with longer and narrower petioles, terminated by a lamina of one or two lines in diameter, its three lobes again three-cleft. *Umbel subsessile* and included among the leaves at the summit of the fertile stems, 2–5-flowered; the flowers and fruits on short pedicels, but raised only slightly above the level of the dense mass of leaves. *Involucre* of 4 or 5 small and *scarious* lanceolate leaflets, unequal, scarcely if at all united at the base, about the length of the pedicels. *Calyx glabrous; the teeth oblong, persistent. Fruit four-lobed;* the *mericarps obovate-orbicular*, or oval, a line and a half long, nearly *plano-compressed*, except that the *broad and thickened margins* are not unfrequently *more or less recurved*, so as to render the mericarp concave on the back and leave wide sinuses at the commissures. The substance of the pericarp is thick and corky, destitute of vittæ, with no utricular epicarp, the 5 slender ribs usually evident. Not unfrequently the fruit has three mericarps; each of just the form of those of *Bolax glebaria*, except that they are more compressed. The plant exudes a resin as copiously as the Balsam Bog and *Laretia*.

Azorella bolacina, Clos, l. c., of which I have not the fruit, is apparently nearly allied to the present species. Its leaves are sometimes entire. May not such a state be the *A. cæspitosa* of Cavanilles?

8. AZORELLA GLEBARIA.

Bolax glebaria, Commerson, in Juss. Gen. p. 266; Gaud. in Ann. Sci. Nat. 5, p. 104, t. 3, f. 2, & Bot. Freyc. Voy. p. 136; DC. Prodr. 4, p. 78; Hook. Ic. Pl. t. 492; Hook. f. Fl. Antarc. p. 285.
B. gummifera & B. complicata, Spreng. Prodr. Umb. p. 9.
Hydrocotyle gummifera, Lam. Dict. 3, p. 156.
Azorella tricuspidata, Lam. Ill. Gen. t. 189, f. 2.
A. cæspitosa, Vahl, Symb. 3, p. 48; Willd. Spec. Pl. 1, p. 1365, ex parte, non Cav.

HAB. Orange Harbour, Fuegia; common. (Both the entire and the trifid-leaved forms.)

The habit and mode of growth, as well as the synonymy of the remarkable *Balsam-bog* are fully elucidated by Dr. Hooker. The fruit is well figured by Sir William Hooker.

§ 4. PECTOPHYTUM. (*Pectophytum*, H. B. K., DC.)

9. Azorella diapensioides, Sp. Nov.

A. dense cæspitosa, nana, glabra; foliis imbricatis confertissimis, lamina patente oblonga integerrima petiolo dilatato basi amplexicauli breviore; umbella 3–7-flora sessili inter folia summa; involucro scarioso 6–9-fido; floribus brevissime pedicellatis; fructibus dorso subcompressis.

Hab. On the crest of the Andes of Peru, near Casa Cancha and Alpamarca. (High Andes of Peru, M'Lean, in herb. Hooker.)

A *dwarf* and depressed, *densely tufted* species, with somewhat the mode of growth and foliage of *Diapensia Lapponica*, but on a smaller scale, an inch or two in height, *glabrous* throughout, except a very few long hairs at the base of the leaves. *Leaves imbricated*, dense; the scale-like petiolar portion *triangular-dilated*, 3 to 5 lines long, appressed and *sheathing* at the base, narrowed upwards, then a little dilated into an *oblong and entire, spreading lamina*, of a thick and firm texture, 1½ or 2 lines long, sometimes becoming linear, obtuse, somewhat mucronate. *Umbel sessile* in the crown of upper leaves, by which it is exceeded in length, both in flower and fruit. *Involucre scarious*, 6–9-*cleft*, usually unequally so; the segments oblong, obtuse, not ciliate. *Flowers* 3 to 7, *on very short pedicels*, apparently all perfect. Limb of the calyx obsolete and truncate. Petals apparently greenish-white, oblong, plane. *Fruit* barely a line and a half long, globular, but moderately *dorsally compressed*, not utricular; the mericarps obscurely five-ribbed.

In Dr. Pickering's notes, a species allied to this is mentioned, from the same district, with the leaves entire, lanceolate and densely tomentose above. Two other species, thought to be *A.* (*Fragosa*) *multifida*, and *A.* (*Fragosa*) *cladorhiza*, are said to be common at Baños, and from Casa Cancha to Culnai. But no corresponding specimens are found in the collection.

8. MULINUM, *Pers.*

1. Mulinum proliferum, *Pers.*

Mulinum proliferum, Pers. Ench. 1, p. 309; DC. Prodr. 4, p. 79; Hook. Bot. Misc. 1, p. 327.
Selinum proliferum, Cav. Ic. Pl. 5, p. 58, t. 486, f. 1.

Hab. Rio Negro, North Patagonia: common on the plains.

The specimens are in fruit, the umbels not proliferous, most of them shorter than the leaves, which are larger and their slender divisions longer than in the figure of Cavanilles.

2. Mulinum spinosum, *Pers.*

Mulinum spinosum, Pers. Ench. 1, p. 309; DC. Hook. Bot. Misc. 1, p. 327.
Selinum spinosum, Cav. Ic. Pl. 5, p. 59, t. 487, f. 1.

Hab. Andes of Chili, above Santiago. (In fruit.)

3. Mulinum cuneatum, *Hook. & Arn.*

Mulinum cuneatum, Hook. & Arn. Bot. Beech. Voy. p. 26, & Bot. Misc. 3, p. 347.
Fragosa spinosa, Ruiz & Pav. Fl. Per. & Chil. 3, p. 27; DC. Prodr. 4, p. 76.

Hab. Chili; on the highlands above Valparaiso. (Without flowers or fruit, the latter still unknown.)

4. Mulinum ulicinum, *Gill. & Hook.*

Mulinum ulicinum, Gillies & Hook. Bot. Misc. 1, p. 328, t. 64, & 3, p. 347.
M. Echinus, Presl, in DC. Prodr. 3, p. 79?

Hab. Andes of Chili, near the snow-line. (A doubtful specimen.)

9. LARETIA, *Gill. & Hook.*

1. Laretia acaulis, *Gill. & Hook.*

Laretia acaulis, Gillies & Hook. in Bot. Misc. 1, p. 329, t. 65; Hook. & Arn. Bot. Misc. 3, p. 347; Gay, Fl. Chil. 3, p. 106.
Selinum acaule, Cav. Ic. Pl. 5, p. 59, t. 487, f. 2.

Hab. High Andes of Chili, above Santiago, near the snow-line.

The specimens have ripe fruit, which very well accords with Hooker's figure, except that the ribs are not so salient. The plant forms dense tufts, "in the manner of *Diapensia*," and exudes a copious resin.

10. ASTERISCIUM, *Cham. & Schlecht.*

1. Asteriscium Chilense, *Cham. & Schlecht.*

Asteriscium Chilense, Cham. & Schlecht. in Linnæa, 1, p. 254, t. 5, f. 1; Hook. Bot. Misc. 1, p. 332, t. 67; Gay, Fl. Chil. 3, p. 100.
A. Chilense & *A. Pœppigii*, DC. Prodr. 4, p. 82.

Hab. Chili: in maritime sands; also on hills, in the neighbourhood of Valparaiso.

11. ACTINOTUS, *Labill.*

1. Actinotus Helianthi, *Labill.*

Actinotus Helianthi, Labill. Pl. N. Holl. 1, p. 67, t. 92; DC. Prodr. 4, p. 83.
Eriocalia major, Smith, Exot. Bot. 2, p. 37, t. 78.

Hab. Sydney and Hunter's River, New South Wales.

2. ACTINOTUS MINOR, *DC. l. c.*

Eriocalia minor, Smith, Exot. Bot. p. 38, t. 79.

HAB. New South Wales; in the neighbourhood of Sydney.

12. SANICULA, *Tourn.*

1. SANICULA SANDWICENSIS, Sp. Nov. (Tab. 88.)

S. *foliis ambitu rotundatis profunde palmati-3–5–partitis, segmentis bi–trifidis incisisque, lobis oblongis vel fol. superiorum lanceolatis argute inciso-serratis, serraturis aristulatis; umbellis tri–quinque-radiatis sæpe proliferis; floribus masculis breviter pedicellatis.*

HAB. Sandwich Islands: Hawaii, on Mouna Loa, at the elevation of 8,000 feet: East Maui; on the mountains.

Root perpendicular, fusiform, 6 to 10 inches long. Stem a foot or two in height, angular, glabrous, as is the whole plant. *Leaves rotund* in circumscription, about 2 inches in diameter, *palmately* 3–5-*parted* and almost divided; the cuneate *segments* 2–3-*cleft and incised* or laciniate, sometimes five-cleft; the *lobes oblong or* of the upper leaves *lanceolate* or oblong-linear, more or less incised, very *sharply and incisely serrate, with aristulate teeth.* Petioles scarious-dilated and clasping at the base; the uppermost and rameal leaves sessile, and passing into the two-leaved involucres. *Umbels of* 3 *to* 5 *rays*, which are longer than the involucels, and *frequently proliferous.* Umbellets 2½ lines in diameter, exceeding the oblong-lanceolate and entire divisions of the involucel, globular, densely many-flowered. Flowers yellow, the *male flowers short-pedicelled* and exterior; the female flowers sessile; their filiform styles exserted and recurved. Fruit (of which little occurs on the specimens) ovate, 2 lines long, echinate throughout with long and stout hooked prickles.

This interesting addition to the very few *Umbelliferæ* of the Sandwich Islands has not been found, so far as I know, by any other collectors. It is allied to *S. Menziesii*, of Oregon and California; but its leaves are much more dissected and of a firmer texture.

Plate 88.—Sanicula Sandwicensis: of the natural size. Fig. 1. A sterile flower. 2. Petal, from the same. 3. Stamen. 4. Vertical section of a fertile flower. 5. Fruit. 6. Vertical section of a mericarp and seed. 7. Embryo.—The details magnified.

13. ERYNGIUM, *Tourn.*

1. Eryngium coronatum, *Hook. & Arn.*

Eryngium coronatum, Hook. & Arn. in Bot. Misc. 3, p. 350.

Hab. Rio Negro, North Patagonia: procumbent, on the river-banks.

2. Eryngium ebracteatum, *Lam.*

Hab. Rio Negro, North Patagonia; with the preceding species.

3. Eryngium paniculatum, *Cav.*

Hab. Chili (the var. *Chilense*, DC.): a common and conspicuous plant around Valparaiso.

14. APIUM, *Linn., Hoffm.*

1. Apium australe, *Petit-Thouars.*

Apium australe, Petit-Thouars, Fl. Trist. d'Acunh. p. 43; Hook. f. Fl. N. Zeal. p. 86.
A. prostratum, Labill. Pl. N. Holl. 1, p. 76, t. 103; Vent. Hort. Malm. t. 81.
A. Chilense, Hook. & Arn. in Bot. Misc. 3, p. 353.
A. graveolens, DC. quoad pl. Antarc.; Hook. f. Fl. Antarc. p. 287.

Hab. Rio Negro, North Patagonia. Orange Harbour, Fuegia; abundant on the coast. Bay of Islands, New Zealand. Also (the var. β., Hook. f.) Hunter's River, New South Wales.

Different as the specimens of the var. β. (the *Petroselinum prostratum*, DC.) appear to be from the var. α. (which represents in the southern hemisphere the *Celery* of Northern Europe), Dr. Hooker states that he has seen the two growing from the same stem, in Tasmania. Dr. Hooker speaks of its excellence both as a salad and a pot-herb in the Antarctic regions. Our naturalists do not refer to its qualities or use. The fruiting specimens all have very thick ribs to the fruit, which is larger than in *A. graveolens*. No other positive distinction has been noted.

2. Apium graveolens, *Linn.*

Hab. Rio Janeiro, Brazil; among rocks on the shore. Doubtless escaped from cultivation.

15. PETROSELINUM, *Hoffm.*

1. Petroselinum peregrinum, *Lag.*

Petroselinum peregrinum, Lag.; Koch, Umb. p. 128; DC. Prodr. 4, p. 102.

Hab. Madeira; on rocks at Corral.

16. HELOSCIADIUM, *Koch.*

1. Helosciadium leptophyllum, *DC.*

Hab. Brazil, near Rio Janeiro. Peru, around Obrajillo. New South Wales, near Sydney and Hunter's River; where probably it is not indigenous.

2. Helosciadium laciniatum, *DC.*

Hab. Andes of Peru, above Obrajillo.

Depauperate specimens, too near the preceding species; but the cauline leaves are all long-petioled, and the lobes less slender.

3. Helosciadium ranunculifolium, *DC.*

Helosciadium ranunculifolium, DC. Prodr. 4, p. 105? Hook. & Arn. in Bot. Misc. 3, p. 354.
H. lateriflorum, Hook. & Arn. Bot. Beech. Voy. p. 26, non Koch.

Hab. Chili: in high ravines, above Valparaiso.

17. AMMI, *Tourn.*

1. Ammi majus, *Linn.*

Hab. Madeira; on the coast east of Funchal.

2. Ammi Visnaga, *Lam.*

Hab. Around Valparaiso, Chili. Doubtless introduced from Europe.

18. BUPLEURUM, *Tourn.*

1. Bupleurum salicifolium, *Solander.*

Hab. Madeira; on the coast, near Funchal.

19. LICHTENSTEINIA, *Cham. & Schlecht.*

1. Lichtensteinia lacera, *Cham. & Schlecht.*

Lichtensteinia lacera, Cham. & Schlecht. in Linnæa, 1, p. 394; DC. Prodr. 4, p. 135.

Hab. Cape of Good Hope, in the vicinity of Cape Town.

2. Lichtensteinia pyrethrifolia, *Cham. & Schlecht. l. c.?*

Hab. Cape of Good Hope, near Cape Town. (In fruit.)

20. FŒNICULUM, *Adans.*

1. Fœniculum vulgare, *Gærtn.*

Hab. Madeira; on the coast, near Funchal. (*Fennel.*)

21. LIGUSTICUM, *Linn.*

1. Ligusticum Pansil, *Bert.* in *DC.*

Hab. Chili, near Valparaiso. (With immature fruit.)

22. ANISOTOME, *Hook. f.*

1. Anisotome latifolia, *Hook. f.*

Anisotome latifolia, Hook. f. Fl. Antarc. p. 16, t. 8.

HAB. Lord Auckland Islands.

This most striking and characteristic Umbelliferous plant (of which only the foliage occurs in our collection) is admirably illustrated by Dr. Hooker.

2. ANISOTOME ROSÆFOLIA, *Hook. f.*

Anisotome (Eustylis) rosæfolia, Hook. f. Fl. N. Zeal. p. 90.
Angelica? rosæfolia, Hook. Ic. Pl. t. 581.

HAB. New Zealand; at Waia-ruru Bay. (As a genus, the name of *Eustylis* is preoccupied in *Iridcæ*.)

23. CRITHMUM, *Tourn.*

1. CRITHMUM MARITIMUM, *Linn.*

HAB. Madeira; on the coast, near San Vicente.

24. PEUCEDANUM, *Linn.*

1. PEUCEDANUM CAPILLACEUM, *Thunb.*

Peucedanum capillaceum, Thunb. Fl. Cap. p. 257; DC. Prodr. 4, p. 178.

HAB. Cape of Good Hope, near Cape Town. (With immature fruit.)

25. BUBON, *Linn.*

1. BUBON GALBANUM, *Linn.*

HAB. Cape of Good Hope, in the immediate vicinity of Cape Town.

26. DAUCUS, *Tourn.*

1. Daucus Carota, *Linn.*

Hab. Bay of Islands, New Zealand. (Probably strayed from cultivation, and not naturalized. It is not mentioned by Dr. Hooker.)

2. Daucus pusillus, *Michx.*

Daucus pusillus, Michx. Fl. Bor.-Am. 1, p. 164; Torr. & Gray, Fl. N. Amer. 1, p. 636.

Hab. Rio Negro, North Patagonia; on sand-hills. Hawaii, Sandwich Islands; on the bullock plains of Mouna Kea, and in the district of Waimea: probably introduced with cattle.

The specimens are all of the large and scabrous-hirsute form which occurs in California (the var. *scaber*, Torr. & Gray, l. c.); the stout stems a foot or two in height, the many-rayed and dense umber scarcely exceeding the involucre. It belongs to the section *Carota*, and is surely distinct from the following.

3. Daucus brachiatus, *Sieber.*

Daucus brachiatus, Sieber, Pl. Exsic. N. Holl. no. 115; DC. Prodr. 4, p. 214; Benth. Pl. Hugel. p. 56; Bunge, in Pl. Preiss. 1, p. 295; Hook. f. Fl. N. Zeal. p. 91.
D. montanus, Willd. in Schult. Syst. Veg. 6, p. 482.
D. australis, Pœpp.; DC. l. c.
D. Montevidensis & *D. toriloides*, DC. l. c.
Scandix glochidiata, Labill. Pl. N. Holl. 1, p. 75, t. 102.

Hab. Peru, around Obrajillo. Bay of Islands, New Zealand. Sydney and Hunter's River, New South Wales.

With Bentham and Bunge, I cannot distinguish the Australian from the South American plant. The latter extends north to Mexico.

27. TORILIS, *Adans.*

1. Torilis nodosa, *Gærtn.*

Hab. Island of St. Helena. Doubtless introduced from Europe.

28. OREOMYRRHIS, *Endl.*

1. Oreomyrrhis andicola, *Endl.*

Oreomyrrhis andicola, Endl.; Hook. f. Fl. Antarc. p. 288, t. 101.
Caldasia andicola, Lagasca, in DC. Mem. Umb. t. 2, & Prodr. 4, p. 229.
C. chærophylloides, Lag. Amœn. Nat. p. 99. (*C. chærophyllæa*, Lag. in DC. l. c.)
Myrrhis andicola, H. B. K. Nov. Gen. & Spec. 5, p. 13, t. 419.
Azorella daucoides, D'Urv. in Mem. Soc. Linn. Par. 4, p. 613; DC. l. c. p. 77.

Hab. High Andes of Peru; at Casa Cancha and Culnai.

The specimen belongs to a pubescent form of the species, like that of Mr. M'Lean gathered in the same region, and has the leaflets of the involucel entire, as in Humboldt's and Dr. Hooker's plants. Similar specimens in other collections, however, have the leaflets of the involucre incised or sparingly lobed, and therefore doubtless belong to *Caldasia chærophylloides* of Lagasca, which cannot be specifically distinct. The fruit in all is ovate-oblong or nearly ovate.

2. Oreomyrrhis lasiopetala.

O. undique canescenti-pubescens; involucellorum foliolis multifidis flores superantibus; petalis extus pubescenti-hirsutis; fructibus oblongis cinereo-tomentosis pedicello longioribus.

Caldasia lasiopetala, Lagasca, in DC. Prodr. 4, p. 229.

Hab. Andes of Peru, at Baños.

This resembles the preceding species, and may possibly pass into it: but it is more cinereous or *canescently pubescent throughout;* the *leaflets of the involucel are dissected*, either pinnately parted or palmately trisected, with the segments pinnatifid and incised, *exceeding the rays* when in flower, although not equalling the mature, *oblong, cinereous-tomentose fruit.* The latter is 2½ or almost 3 lines long, and commonly twice as long as the pedicels. The flowering stems or peduncles are thick and fistulous at the base. *Petals hirsute-pubescent* externally.

29. OSMORHIZA, *Raf.*

1. Osmorhiza Chilensis, *Hook. & Arn.*

Osmorhiza Chilensis, Hook. & Arn. Bot. Beech. Voy. p. 26, & Bot. Misc. 3, p. 355; Hook. f. Fl. Antarc. p. 288.
O. Berterii, DC. Prodr. 4, p. 232; Gay, Fl. Chil. 3, p. 143.
Chærophyllum Chilense, Poir. Dict. 5, p. 105.

Hab. Orange Harbour, Fuegia. (Much resembling the *O. brevistylis* of North America, except that it has neither involucre nor involucel.)

30. HERMAS, *Linn.*

1. Hermas villosa, *Thunb.*

Hab. Cape of Good Hope, in the vicinity of Cape Town.

There is an Umbelliferous plant of large size, apparently resembling an *Angelica* or *Pastinaca*, growing on the mountains of Kauai, one of the Sandwich Islands. Only a leaf (pinnate, with 7 large ovate leaflets) and the inflorescence of the preceding year, from which all the fruit has fallen, were collected. The carpophore is 4 lines long.

ORD. ARALIACEÆ.

1. CUSSONIA, *Thunb.*

1. CUSSONIA THYRSIFLORA, *Thunb.*

Cussonia thyrsiflora, Thunb. in Act. Nov. Ups. 3, p. 212, t. 12; Jacq. Eclog. t. 61.

HAB. Cape of Good Hope, in the vicinity of Cape Town.

2. STILBOCARPA, *Hook. f.*

1. STILBOCARPA POLARIS, *Hook. f.*

Aralia polaris, Hombr. & Jacquinot, Bot. Phaner. Voy. Pol. Sud. t. 2, sine descr.; Hook. f. Fl. Antarc. p. 95, & in Hook. Ic. Pl. t. 747.
Stilbocarpa polaris, Hook. f. Fl. N. Zeal. p. 95, sub *Aralia*.

HAB. Lord Auckland Islands; collected by Dr. Holmes. (Foliage only.)

Dr. Hooker, who has admirably described this most striking Antarctic plant, recognises it as "certainly of a different genus from *Aralia* proper," but hesitates fully to separate it before the order shall have undergone the revision which it so greatly needs. He doubts whether the petals are really valvate in æstivation,—a doubt which may be readily solved, since in specimens with flower-buds, collected and kindly furnished by himself, they are seen to be decidedly *imbricated*. This character, added to the acetabuliform fruit, and the styles fewer than the petals, must surely exclude the plant from *Aralia*, however that genus be limited.

3. ARALIA, *Linn.*

The genuine *Araliæ* (from which *Dimorphanthus*, Miquel, does not differ) are all more or less monœciously polygamous; the sterile flowers having the pistil imperfect, and their abortive short styles united. The styles of the fertile flowers are also united at the base in *A. racemosa*, Linn., of which *A. edulis*, Sieb. & Zucc., the *Dimorphanthus edulis* of Miquel, is a strict congener; as *D. elatus*, Miquel, seems to be of *Aralia spinosa*. The *A. racemosa* has traces of stipules, or stipular appendages, at the base of the petiole, which are not found in the other North American species.

§ 1. SCHÆFFLERA, Forst.—*Arborescens; foliis manifeste stipulatis digitatis; umbellulis composito-racemosis; stylis* 5–10.

1. ARALIA SCHÆFFLERA, *Spreng.*

Aralia Schæfflera, Spreng. Pug. Pl. 1, p. 28; DC. Prodr. 4, p. 258; A. Rich. Fl. N. Zel. p. 283; Hook. f. Fl. Antarc. p. 95, t. 22.
Schæfflera digitata, Forst. Char. Gen. t. 23; Lam. Ill. Gen. t. 221.

HAB. New Zealand; abundant at the Bay of Islands.

The styles appear to me to be perfectly distinct (although slightly elevated on a broad stylopodium), and so, indeed, they are represented in Dr. Hooker's excellent figure.—To *Schæfflera* probably belongs *Aralia Quinduense*, H. B. K., having stipules, which furnish its leading character, but do not exist in *Aralia* proper, except as mere vestiges in one or two species. As to the styles, they are reduced to five in the following truly allied species.

2. ARALIA VITIENSIS, Sp. Nov. (Tab. 89.)

A. arborescens, inermis, glabra; foliis stipulatis longe petiolatis digitatis; foliolis 7–9 *longe petiolulatis cuneato-oblongis subito acuminatis sub-*

serratis, lateralibus parvis; umbellis confertis pedunculatis in racemum compositum magnum paniculæformem digestis; stylis pyrenisque 5.

HAB. Ovolau, Feejee Islands; at the elevation of 1,000 feet above the sea.

A *small tree*, "20 feet high," *unarmed*, *glabrous*, or the nascent parts cinereous-pubescent. *Leaves* alternate, digitately 7–9-foliolate. Petioles 4 inches or more in length; the base slightly connected with a pair of pretty large, oblong-triangular, acute, clasping, membranaceous stipules. *Leaflets cuneate-oblong*, or cuneate-obovate, sometimes inclining to elliptical, *abruptly acuminate*, *obscurely serrate*, membranaceous, 3 or 4 inches long and on partial petioles of about an inch long, or the *lateral ones much smaller*. Inflorescence axillary, *compound-racemose;* the 8–10-flowered *umbels* (on peduncles of 3 or 4 lines long) *crowded* on the whole length of the elongated primary divisions, forming a large and extremely many-flowered spreading panicle. Bracts small, deciduous. Ultimate pedicels a line and a half long. Only the fruit is known; which is a *five-celled drupe*, strongly five-angled when dry, only a line and a half in diameter, marked near the summit by the truncate edge of the calyx, crowned with 5 short and wholly distinct divergent styles (their stigmas terminal): pyrenæ coriaceous. Seed suspended. Embryo small, next the hilum.

PLATE 89.—ARALIA (SCHÆFFLERA) VITIENSIS: branch, in fruit, of the natural size. Fig. 1. A fruit, enlarged. 2. A transverse, and 3, a vertical section of the same.

4. PANAX, *Linn.*

1. PANAX FRUTICOSUM, *Linn.*

HAB. Philippine Islands; near Baños, Luzon. Also Samoan and Feejee Islands: introduced, and planted around houses. (Foliage only.)

2. PANAX SAMBUCIFOLIUM, *Sieber.*

Panax sambucifolium, Sieber, Pl. Exsic. N. Holl. 2, no. 256; DC. Prodr. 4, p. 255.

HAB. New South Wales; probably gathered in the neighbourhood of Sydney.

3. PANAX SAMOENSE, Sp. Nov.

P. fruticosum, inerme, glabrum; foliis simpliciter imparipinnatis; foliolis 11–15 *ovato-lanceolatis acuminatis basi rotundatis vel subcordatis membranaceis integerrimis; umbellis bis terve compositis corymbosis; stylis* 2; *fructibus plano-compressis.*

HAB. Samoan or Navigators' Islands; on Savaii and Tutuila.

This is said to form a *shrub*, from 6 to 12 feet in height, and is *glabrous and unarmed.* The alternate *leaves* are apparently all *simply pinnate;* the stout petiole and rhachis a foot or two in length. *Leaflets* 11 *to* 15, *ovate-lanceolate* or oblong-lanceolate, *acuminate, entire, rounded or obscurely cordate at the base*, 5 to 8 inches long, on footstalks of half an inch long, *membranaceous*, sparingly feather-veined. Inflorescence terminal, ample, *corymbosely umbellate-compound*, or decompound; the ultimate umbelets 10–20-flowered; the pedicels filiform. Flowers diœcious; the male flowers destitute of styles. Fertile flowers with 2 short styles. *Fruit flat*, apparently even when ripe, 4 lines in diameter, orbicular, slightly emarginate at both ends, perhaps nearly dry.

4. PANAX ARBOREUM, *Forst.*

Panax arboreum, Forst. Prodr. Fl. Ins. Austr. p. 75; A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 2, p. 213; Hook. Lond. Jour. Bot. 2, p. 421, t. 11; Hook. f. Fl. N. Zeal. p. 94.

HAB. New Zealand; at the Bay of Islands.

5. Panax simplex, *Forst.*

Panax simplex, Forst. l. c.; A. Rich. Fl. N. Zel. p. 280, t. 31; Hook. f. l. c. & Fl. Antarc. p. 19, t. 12.

Hab. Lord Auckland Islands.

Some of the leaves are strictly opposite, especially the last of each year's growth.—This and the foregoing species are perhaps to be associated with the following, which, for the present, I have referred to *Hedera*.

5. HEDERA, *Tourn., Linn.*

To *Hedera* rather than to *Aralia*, as the genera are at present characterized, I should refer the following, along with some other species with more or less united short styles, which surely are not real congeners of the original, North American *Araliæ*. The Hawaiian species, varying as they do from di–trigynous to pentagynous, unless excluded, would wholly confound the already arbitrary limits between *Aralia* and *Panax*.

* *Novo-Zelandicæ (foliis raro oppositis).*

1. Hedera crassifolia.

Aralia crassifolia, Banks & Soland.; A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 2, p. 214; Hook. Ic. Pl. t. 583, 584; Hook. f. Fl. N. Zeal. p. 96.
Xylophylla longifolia, Banks & Soland. Mss. & Ic.

Hab. Bay of Islands, New Zealand.

A small tree, with extremely polymorphous, simple or trifoliolate, rigid foliage. The united styles are well represented in Sir William Hooker's figure.

2. HEDERA LESSONI.

Panax? Lessoni, DC. Prodr. 4, p. 253.
Cussonia Lessonii, A. Rich. Fl. N. Zel. p. 285, t. 32; A. Cunn. Bot. N. Zeal. l. c.
Aralia Lessoni, Hook. f. Fl. N. Zeal. p. 96.

HAB. Tippona, New Zealand.

The short styles are united nearly or quite to the summit; the five stigmas at length radiate-spreading.

* * *Sandwicenses (foliis plerisque oppositis).*

3. HEDERA GAUDICHAUDI. (Tab. 90.)

H. arborescens; foliis plerisque oppositis quinquefoliolatis passim trifoliolatis longe petiolulatis ovalibus seu ellipticis cartilagineo-serratis serrulatisve; umbellulis in paniculam thyrsiformem confertis; stigmatibus pyrenisque 3–5.

Aralia trigyna, Gaud. Bot. Freyc. Voy. p. 474, t. 98.
Panax? Gaudichaudi, DC. Prodr. 4, p. 253; Hook. & Arn. Bot. Beech. Voy. p. 84.

Var. *β. foliolis sæpius 3 subovatis vix denticulatis seu integerrimis.*

Panax? ovatum, Hook. & Arn. Bot. Beech. Voy. p. 84.

HAB. Sandwich Islands: Hawaii; in forests, at the base of Mouna Loa and Mouna Kea: Oahu; on the Kaala Mountains. (First collected by Menzies.) Var. *β*. Oahu, and the western part of Maui.

An *arborescent* or shrubby species, glabrous, unarmed, branched. *Leaves opposite* in all the specimens, exstipulate, digitate. *Leaflets* 5, *or occasionally* 3, *oval or elliptical*, obtuse or rounded at both ends, 2 to 3½ lines long, chartaceous or coriaceous, not thickened, rather sparsely *serrate or serrulate* with incurved *cartilagineous teeth*, thickly feather-veined, reticulated, the lateral ones smaller, all on partial footstalks of 6 to 15 lines long. Common petiole 2 or 3 inches long. Peduncle terminal, short; bearing an inflorescence shorter than the leaves, consisting of a large number of small and short-peduncled, several-flowered *umbels, crowded in a thyrsoid panicle.* Bracts and bractlets caducous. Pedicels about a line and a half long, dilated into a 3–5-angled or toothed small calyculus at the articulation with the flower. Flower-buds 2 lines long, glabrous: the flowers polygamous, or mostly hermaphrodite. Calyx with an obpyramidal three-angled or occasionally 4–5-angled tube; the limb truncate, very short, repand. Petals 5, ovate-triangular, valvate in æstivation, expanding in anthesis, early deciduous. Stamens 5, not longer than the petals: anthers two-celled, incumbent. Ovary three-celled or four-celled by abortion (the cells more or less unsymmetrical), rarely two-celled, more commonly five-celled, with a solitary anatropous ovule suspended from the summit of each cell. Style in the sterile flowers abortive, in the hermaphrodite flowers none, besides the short and conical stylopodium, bearing 3, 4, or often 5 (sometimes 2?) oblong, at first connivent, in fruit divergent, introrse stigmas. Drupe as large as a small pea, fleshy, 3–5-angled in the dried state, containing, 3, 4, *or* 5 *pyrenæ,* of a coriaceous texture. Albumen corneous-fleshy. Embryo minute, next the hilum, cordate.

The var. β., which is undoubtedly the *Panax? ovatum* of Hooker and Arnott (who had seen only foliage), is evidently a state of the species with only *three leaflets,* which are usually *suborate and barely denticulate or entire.*

PLATE 90.—HEDERA GAUDICHAUDI: var. α., in flower, and var. β., in fruit, of the natural size. Fig. 1. An unexpanded flower, with its calyculus and pedicel. 2. Vertical section of an expanded flower. 3. Flower (the petals and stamens fallen), with 3 stigmas. 4. Transverse section of the same. 5. Transverse section of a nearly symmetrically three-celled ovary. 6. A drupe. 7. Transverse section of the same. 8. A pyrena. 9. Vertical section of the same, showing the minute embryo. 10. Embryo, detached.—The details variously magnified.

4. HEDERA PLATYPHYLLA. (Tab. 91.)

H. fruticosa; foliis plerisque oppositis trifoliolatis longissime petiolulatis *transversim rhomboideo-dilatatis latioribus quam longis subito acuminatis integerrimis, margine incrassato; umbellulis laxe cymoso-paniculatis; stigmatibus cum ovarii loculis 2?–5.*

Panax? platyphyllum, Hook. & Arn. Bot. Beech. Voy. p. 84.

HAB. Oahu; on the mountains behind Honolulu, at the elevation of 2,000 feet. (Also gathered by Gaudichaud, in the Voyage of the Bonite.)

A *shrub*, glabrous throughout, unarmed. *Leaves opposite* in all the specimens, on slender petioles of 3 or 4 inches in length, exstipulate, digitately *trifoliolate*. *Leaflets transversely dilated, somewhat rhomboidal*, from an inch to 2 inches long, but 1½ to nearly 3 inches wide, *abruptly acuminate* or apiculate, rarely emarginate or retuse, *entire, the margin thickened*, chartaceous or slightly coriaceous in texture, somewhat lucid, of the same hue both sides, copiously feather-veined; the veins slender, parallel and straight, connected by minute reticulated veinlets: the *partial footstalks very long*, about 2 inches in length. *Umbels* few-flowered, in a simple or trichotomous and *loose cymose panicle*, which is shorter than the leaves. Pedicels one or 2 lines long, bearing a small calyculus at the articulation with the flower. Flowers nearly 3 lines long; those of the specimens hermaphrodite. Calyx-tube obconical; the short limb repand-truncate, denticulate. Petals 5, triangular-ovate, valvate in æstivation, a line and a half long, expanding in anthesis, early deciduous. Stamens 5, as in the preceding species. *Ovary five-celled*, or sometimes four-celled, in our specimens. Styles none. *Stigmas* sessile on a short stylopodium, 2, according to Hooker & Arnott, but in our specimens always 4 or 5. Ovule with the rhaphe internal, as in the family. Fruit not seen.

PLATE 91.—HEDERA PLATYPHYLLA: a branch, in flower, of the natural size. Fig. 1. An unexpanded flower, with its small calyculus. 2. A vertical section of an opening flower. 3, 4. Stamens. 5. An ovule. 6. Transverse section of a four-celled ovary. 7. Similar transverse section of a five-celled ovary.—The details variously magnified.

6. PARATROPIA, *Blume, DC.*

1. Paratropia Samoensis, Sp. Nov.

P. arborescens? foliis longe petiolatis digitatis; foliolis 5–7 *membranaceis oblongis seu cuneato-oblongis utrinque acuminatis argute mucronato-serrulatis glabris, lateralibus parvis; panicula composita; umbellulis racemosis paucifloris; staminibus* 5.

Hab. Upolu, one of the Samoan or Navigators' Islands.

The imperfect flowering specimen belongs apparently to an unarmed and *arborescent* plant. *Leaves* alternate, *digitately 5–7-foliolate.* Stipules none. *Petioles elongated,* 6 to 9 inches long, somewhat pubescent when young. *Leaflets oblong,* oblong-lanceolate, or *cuneate-oblong, acuminate at both ends,* on short partial footstalks, *sharply and mucronately serrulate* with appressed teeth, very thin and *membranaceous, glabrous,* except a few hairs on the midrib and veins when young, the middle ones 5 or 6 inches long, the lateral ones successively smaller. *Panicle compound,* terminal, shorter than the leaves, somewhat pubescent. Flowers minute; the flower-buds scarcely half a line in diameter, 5 to 8 together in small *umbels,* which are *racemose* on the branches of the inflorescence. Calyx truncate. Petals 5, apparently expanding in anthesis. *Stamens* 5. Stigmas 4 or 5, very short, scarcely emerging from the centre of the convex or conical disk. Fruit unknown.

2. Paratropia? multijuga, Sp. Nov.

P. arborea? glabra; foliis impari-pinnatis multijugis, rhachi nodosa bipedali et ultra; foliolis elliptico-oblongis integerrimis breviter petiolulatis basi subcordatis sinu clauso; racemo composito longissimo; umbellulis paucifloris; staminibus 5.

Hab. Feejee Islands; at Sandalwood-Bay, Vanua levu.

The specimen consists of a detached leaf and a compound raceme (with the flower-buds not full-grown) of an apparently arborescent plant, which is doubtless a congener of *Paratropia nodosa*, DC., but is at once distinguished by the entire leaflets. The *leaves* are *glabrous*, very large, the terete *nodose rhachis* 2 *feet long* or more, and the petiole 6 or 8 inches long, *pinnate*. *Leaflets elliptical-oblong*, 9 pairs with an odd one, slightly coriaceous, about 6 inches long, green both sides, *entire*, short-petiolulate, the base *slightly cordate*, with the *sinus closed*. Inflorescence as long as the leaf, *compound-racemose*, the primary divisions bracteate, bearing a large number of small and *few-flowered umbels* on short and bracteate peduncles. Flowers minute, *pentandrous*. Stigmas sessile.

There is in the collection some indeterminable digitate foliage of what is probably an undescribed *Paratropia*, from Ovolau, Feejee Islands, and of another from Luzon.

7. REYNOLDSIA, Nov. Gen.

Flores polygami. Calyx basi nudus; tubo cum ovario connato; limbo brevissimo integerrimo vel subrepando. Petala 8–10, *epigyna, valvata, apice in calyptræ formam coalita, sub anthesi dejecta. Stamina* 8–10, *cum petalis inserta, iisdem alterna: filamenta brevia: antheræ lineares. Ovarium inferum*, 8–18-*loculare: stylus nullus vel subnullus: stigma indivisum*, 8–18-*radiatum. Ovula in loculis solitaria, suspensa, anatropa. Drupa baccata, globosa*, 8–18-*pyrena; pyrenis cartilagineis. Embryo in apice albuminis dense carnosi minutus; radicula supera cylindrica.—Arbores insularum Pacifici, glabræ, inermes, exstipulatæ; foliis simpliciter pinnatis sæpissime trijugis cum impari, foliolis subdentatis; umbellis racemisve compositis paniculatis laxifloris.*

Whether certain species referred by Blume and DeCandolle to *Sciodaphyllum*, on account of their calyptræform corolla, really belong to the present genus, I have not the means to determine. But the perfectly consolidated stigmas, the larger number of pyrenæ, the lax and open inflorescence, and the pinnate leaves, taken together forbid the combination of the two species here described with the American *Sciodaphylla*. From *Brassaia*, Endl., they are excluded by the want of an involucel at the base of the calyx, and by the wholly inferior ovary, as well as by the pinnate and exstipulate leaves.—I dedicate the genus to J. N. Reynolds, Esq., who merits this commemoration for the unflagging zeal with which he urged upon our Government the project of the South Sea Exploring Expedition, and also for having made, under trying circumstances, an interesting collection of dried plants in Southern Chili, many years ago.

1. REYNOLDSIA SANDWICENSIS, Sp. Nov. (Tab. 92.)

R. foliolis subcordatis; corolla clausa oblonga; stigmate 8–10-*radiato; drupa* 8–10-*pyrena.*

HAB. Sandwich Islands: in a ravine near Waianae, Oahu.

"Tree 30 feet high," glabrous, or the nascent parts slightly pubescent. Stipules none. Leaves alternate, simply pinnate, mostly of 7 leaflets. Petiole slender, angled, dilated at the insertion. *Leaflets subcordate*, broadly ovate, or somewhat deltoid, either obtuse, acutish, or somewhat acuminate, sparingly toothed especially towards the base, thin, pinnately veined, 1½ to 2 inches long; the partial footstalks 6 or 9 lines in length. Inflorescence terminal or lateral, forming an open compound or decompound panicle; the pedicels (3 to 5 lines long) racemose along its divisions, as well as umbellate at their extremity. Bracts minute, caducous. Sterile and fertile flowers intermixed in the same inflorescence, and apparently similar, except that the stigma is imperfect or nearly obliterated in the sterile flowers. Calyx naked (not involucellate at the base); the tube turbinate or obconical, wholly adnate to the ovary; the limb very short, truncate and entire, or slightly undulate. *Corolla in the bud oblong*, or cylindraceous, epigynous, 3 lines in length, somewhat angular, composed of usually 10 linear petals, which are valvate in æstivation, and with their inflexed tips more strongly coalescent, separating from the insertion in anthesis, and falling away together as a calyptra. Stamens as many as the petals and alternate with them, epigynous, deciduous: filaments subulate, short: anthers linear, longer than the filaments, fixed near the middle, incumbent, two-celled; the cells opening longitudinally. Style none. Stylopodium in the sterile flowers small or obsolete; in the fertile conical, and terminated by the undivided, depressed, somewhat *8–10-rayed stigma.* Ovary 8–10-celled, wholly inferior, in the sterile flowers more or less inane; the fertile with a solitary anatropous ovule suspended from the summit of each cell; the rhaphe ventral. Fruit a globose *drupe, of* 8 *or* 10 *pyrenæ* in a pulpy sarcocarp, 3 or 4 lines in diameter, tipped with the conical stylopodium and persistent stigma. Pyrenæ compressed, smooth, of a firm or cartilagineous texture, filled by the seed. Testa very thin. Embryo minute at the apex of the dense fleshy albumen: radicle superior, cylindrical, twice the length of the oval thickened cotyledons.—The leaves in the specimen collected are all young and evidently developed at the same time as the flowers: they probably enlarge and acquire a firmer texture.

PLATE 92.—REYNOLDSIA SANDWICENSIS: a branch, of the natural size. Fig. 1. An unexpanded flower. 2. Same, with the corolla detached, taking with it the stamens. 3. Vertical section of an unexpanded flower. 4, 5. Stamens. 6. Ovule. 7. Transverse section of a ten-celled ovary. 8. A mature drupe. 9. Transverse section of the same. 10. Vertical section of a drupe, showing the embryo in one seed. 11. Embryo, detached.—The details variously magnified.

2. REYNOLDSIA PLEIOSPERMA, Sp. Nov. (Tab. 93.)

R. foliolis ovatis seu lanceolato-oblongis; corolla clausa conica vel ovoidea; stigmate 15–18-*radiato; drupa* 15–18-*pyrena.*

HAB. Forests in the interior of Savaii, one of the Samoan or Navigators' Islands.

Our materials consist of two imperfect specimens, here associated; but they may hereafter prove to be distinct: one, with *broadly ovate leaflets* and portions of a compound umbel with flower-buds, which are apparently all sterile; the other, with *oblong or lanceolato-oblong leaflets,* and with mature fruit only. The size of the tree or shrub not ascertained. Leaflets 7, or sometimes 5, glabrous, as is the whole plant, 2 to 4 or 5 inches long, rounded or oblique at the base, tapering to an acute or acuminate apex, usually beset with 3 or 4 salient and callous or glandular-tipped teeth on each margin; the partial footstalks 2 to 5 lines long. Stipules none. Flowers apparently subdiœcious, in compound and panicled umbels, which in the fertile plant, at least, are racemose-proliferous. Pedicels of the sterile flowers 8 or 9 lines long; of the fruit 3 to 5 lines long. Calyx naked at the base, with a short and truncate, obscurely repand border. *Corolla in the bud conical or ovoid*, 2 lines long, falling off without expanding; the 8 or 10 valvate petals cohering with each other, especially at the inflexed tips. Stamens 8 to 10, as in the foregoing species, except that the anthers are only linear-oblong. Cells of the sterile ovary numerous, empty: sterile stigma obscurely many-rayed, crowning the very short stylopodium. Fertile flowers not seen. Fruit a wholly inferior, depressed-globose, baccate *drupe*, of the size of a pea, abruptly pointed by a very short style or narrow stylopodium, which bears a depressed, and 15–18-*radiate stigma;* the cartilagineous and smooth *pyrenæ* 15 to 18, or sometimes perhaps even 20 in number. Seed suspended. Embryo minute, at the apex of the hard fleshy albumen: radicle superior.

Plate 93.—Reynoldsia pleiosperma: foliage, portion of inflorescence, unexpanded sterile flowers, and also fruit from a different specimen, of the natural size. Fig. 1. A flower-bud, the corolla detached as a calyptra, taking with it the stamens. 2. A separate petal, inside view. 3, 4. Stamens. 5. Vertical section of a sterile pistil. 6. A drupe. 7. Transverse section of the same. 8. A drupe, vertically divided.—The details variously magnified.

8. GASTONIA, *Commers.*

1. Gastonia? Oahuensis, Sp. Nov.

G.? foliis pinnato-5–9-foliolatis; foliolis carnosis oblongis seu ovalibus obtusis integerrimis; umbellis compositis cymosis; petalis 5; *staminibus* 10; *ovario sterili quadri–quinqueloculari.*

Hab. Oahu, Sandwich Islands; on the mountains behind Honolulu, at the elevation of 2,000 feet.

The collection contains only a single specimen of this evidently arborescent plant, with staminate but sterile flowers only. Until additional materials are obtained, it may be provisionally appended to *Gastonia*, merely because it accords with the Mauritian species in having twice as many stamens as petals, and also pinnate leaves.—Branches stout, marked with very large leaf-scars. *Leaves pinnately 5–9-foliolate*, glabrous, as is the whole plant. Stipules none. *Leaflets fleshy* and thick, 2 to 3½ inches long, *oblong or oval*, inclining to obovate, *obtuse*, closely but inconspicuously feather-veined, mostly acute at the base, on a short partial footstalk. *Umbels compound, cymose*, crowded at the summit of a compressed-angled common peduncle. Bracts, if any, caducous. Calyx-tube (of the sterile flowers) clavate, 4–5-angled; the limb very short, truncate, repaud. *Petals* 5, triangular-lanceolate, valvate in æstivation, expanding in anthesis, but caducous. Stamens 10: filaments subulate, short: anthers two-celled, oblong, opening longitudinally. *Sterile ovary* 4–5-*celled*, inane, crowned with a very short stylopodium and an abortive entire stigma. Fertile flowers and fruit not seen.

The collection of M. Gaudichaud, made at Oahu in the Voyage of the Bonite, contains some pinnately compound foliage of another Araliaceous tree, probably a congener of the above, but hardly of the same species.

9. TETRAPLASANDRA, Nov. Gen.

Flores polygami? Calyx tubo hemisphærico cum ovario connato; limbo brevissimo truncato vix denticulato. Petala 7–8, *epigyna, valvata, leviter calyptratim cohærentia, caduca. Stamina cum petalis inserta, iisdem numero quadrupla, nempe* 28 *v.* 32, *uniseriata: filamenta brevia: antheræ oblongæ, subsagittatæ. Ovarium* 7–10-*loculare: stylus nullus: stigma indivisum, obsolete* 7–10-*radiatum, stylopodio brevi conico impositum. Ovula in loculis solitaria, suspensa, anatropa. Drupa baccata,* 8–10-*pyrena; pyrenis coriaceis.* (*Embryo* *haud visus.)—Arbor procera, inermis; foliis exstipulatis pinnatis 5–7-foliolatis subtus incanis; umbellis decompositis paniculatis.*

1. TETRAPLASANDRA HAWAIENSIS, Sp. Nov. (Tab. 94.)

HAB. Hawaii, Sandwich Islands; in the district of Puna.

"A fine tree, 30 or 40 feet high, with the trunk a foot in diameter," *unarmed*. Branchlets, with the leaf-stalks, inflorescence, and the exterior of the flowers canescent with a close and soft tomentum, glabrate with age. *Leaves* alternate, *destitute of stipules*, large (the stout petiole with the rhachis a foot or two in length), *pinnately 5–7-foliolate*. Leaflets oblong or elliptical, from 4 to 7 inches long, and 2 inches or more in width, obtuse at both ends or acute at the base, entire, coriaceous, glabrous above, densely *canescent-tomentose underneath*, pinnately veined from a stout and salient midrib, petiolulate. Peduncle terminal, stout, bearing an ample and open panicle of compound or *decompound umbels*. Bracts caducous. Peduncles and pedicels articulated; the latter about an inch long. *Flowers probably polygamous*, large for this order; the buds nearly half an inch long and 4 or 5 lines in diameter. *Calyx* naked at the base (not involucellate); the *tube hemispherical, adnate;* the truncate *limb very short, entire*, or obscurely repand, persistent. *Corolla epigynous*, ovoid-hemispherical in the bud, 3 or 4 lines long, of 7 or 8 triangular-oblong *valvate petals*, lightly cohering, especially by their inflexed tips, sometimes apparently separating, but usually caducous in the form of a calyptra. *Stamens* 28 or 32, *four times as many as the petals*, and inserted with them, *in a single series*, on the margin of the epigynous disk: *filaments short*, filiform, about the length of the *anthers*, which are *sagittate-oblong*, fixed by the middle, incumbent, two-celled; the cells opening longitudinally. *Ovary* 7–10-*celled;* the apex crowned with a *short and conical stylopodium*, bearing a depressed, *undivided, obscurely* 7–10-*rayed stigma*. Ovules solitary and suspended from the summit of each cell, anatropous. Fruit a globular *baccate drupe*, 5 lines in diameter, containing 7 to 10 compressed and *coriaceous pyrenæ*. Seed suspended. Albumen fleshy. Embryo not seen.

This remarkable plant differs from all other known *Araliaceæ* by having four times as many stamens as petals (whence the name, compounded of τετραπλάσιος, *four-fold*, and ἄνδρα, used for *stamens*), excepting the succeeding genus, in which they are indefinitely numerous.

PLATE 94.—TETRAPLASANDRA HAWAIENSIS: portion of inflorescence and foliage, of the natural size. Fig. 1. A flower, with the cohering petals detached. 2. The same, with the stamens also fallen away. 3. A petal, inside view. 4, 5. Stamens. 6. Vertical section of an ovary. 7. Transverse section of an ovary. 8. A drupe, of the natural size. 9. Vertical section of a drupe. 10. A pyrena, transversely divided.—The details (except Fig. 8) variously magnified.

10. PLERANDRA, Nov. Gen.

Flores polygamo-monoici vel dioici? Masc.—*Calyx tubo turbinato cum ovario connato; limbo brevissimo post anthesin repando-undulato. Petala* 4? *epigyna, oblonga, æstivatione valvata, mox decidua. Stamina indefinita, epigyna, pluriserialia: filamenta filiformia: antheræ oblongæ. Ovarium* 14–15-*loculare: ovula in loculiis solitaria, parva, suspensa, sæpius abortiva vel nulla. Stigma truncatum, obsolete multiradiatum, stylopodio conico impositum.* Fœm. *ignoti.—Arbor* 20-*pedalis, macrophylla; foliis digitatis* 9-*foliolatis; umbellis compositis.*

1. PLERANDRA PICKERINGII, Sp. Nov. (Tab. 95.)

HAB. Ovolau, Feejee Islands; at the elevation of 1,500 feet.

A small *tree*, 15 or 20 *feet high*, according to Dr. Pickering's notes, "with very large leaves as well as compound umbels," unarmed? glabrous. *Leaves digitate*, the stout and fistulous petioles 2 feet or more in length. Leaflets 9, oblong or oblong-obovate, entire, acute at the base, membranaceous, pinnately veined, a foot and a half long in the specimen, probably often much larger, the partial footstalks 2 or 3 inches long. Rays of the compound umbel large and stout: the ultimate umbels many-rayed, the rays an inch and a half long.

Involucel apparently wanting. Male flowers large: the tube of the *calyx* (seen only after anthesis) *turbinate, adnate to the ovary*, 3 or 4 lines long; its *limb very short*, truncate, undivided, but *repandly undulate*, sometimes appearing to be 4–5-lobed. *Petals apparently* 4 (perhaps 5), *epigynous*, 6 or 7 lines long, thickish, *oblong, valvate in æstivation*, perhaps expanding in anthesis, but *early deciduous. Stamens indefinite*, as many as 60 or 70, distinct, inserted with the petals, occupying more than one series; the *filaments filiform* and apparently as long as the corolla, deciduous: *anthers oblong*, somewhat sagittate, two-celled, fixed near the middle, incumbent. *Ovary* fleshy, turbinate, *fourteen-celled*, or sometimes fifteen-celled, with complete but thin dissepiments. *Ovules solitary, suspended*, anatropous, small, and apparently sterile, or often wholly wanting. *Stylopodium conical*, large, a line and a half long, tipped with a *truncate* and entire, but obscurely 14–15-*radiate stigma*. Female flowers and fruit (the latter noted by Dr. Pickering as large) not collected.

It is much to be regretted that fuller materials of this most interesting plant were not preserved. In the collection there is only a single compound leaf, and one ray of the compound umbel, bearing an umbellet of nearly 30 flowers, which are past anthesis, the filaments and a petal or two only remaining on some of them. The enlarging and fleshy ovary has the appearance of being fructified, but seldom contains even a sterile ovule. The scanty materials, therefore, barely suffice to show that we have in this plant a truly polyandrous *Araliaceæ!* To this character the name chosen for the genus alludes.

PLATE 95.—PLERANDRA PICKERINGII: a leaf and an ultimate ray of the compound umbel, of the natural size. Fig. 1. Vertical section of a flower. 2. A petal. 3, 4. Anthers. 5. Flower, from which the petals and stamens have fallen. 6. Transverse section of the ovary. —The details enlarged.

11. BOTRYODENDRUM, *Endl.*

BOTRYODENDRUM, Endl. Prodr. Fl. Ins. Norf. p. 62, & Gen. Pl. p. 795; Hook. f. Fl. N. Zeal p. 97.

1. Botryodendrum Taitense, *Guill.* (Tab. 96.)

B. foliis lanceolatis utrinque acutis chartaceis ad apicem ramorum confertis; thyrso capitulorum erecto.

Botryodendrum Taitense, Guill. Zeph. Tait. p. 55, sine char.
B. cerberoides & *B. lancifolium*, Rich, in Herb.

Hab. Tahiti, Society Islands; in mountain forests.

The specimens consist, 1st, of a branch, with narrow, almost linear-lanceolate leaves, and a portion of inflorescence, with fruit, ticketed *B. lancifolium*, N. Sp., Tahiti, by Mr. Rich; and 2d, of one with larger and broader, but otherwise similar leaves, with some detached fruitful inflorescence, and male and female flowers, imperfectly preserved, ticketed *B. cerberoides*, N. Sp., Samoa, by Mr. Rich. But, on referring to Dr. Pickering's memoranda, I find evidence that both specimens were gathered at Tahiti; and they appear to be mere varieties of one and the same species. I regret that the state of the materials does not allow me properly to illustrate the genus (of which no figure has yet been published), nor to compare this species with Endlicher's *B. angustifolium* of Norfolk Island, to which it appears nearly allied. Our plant is stated to be a shrub, from 8 to 12 feet high. The *leaves are chartaceous* in texture, glabrous, as is the whole plant, *lanceolate, acute at both ends*, entire, alternate, *crowded* at the summit of the branches; in the narrow-leaved form only 7 or 8 inches long and three-fourths of an inch wide, on petioles of 2 inches in length, the apex tapering to a very acute point; in the other, they are from 8 inches to a foot long (in the notes of Dr. Pickering said to be 18 inches long), 2 or 2½ inches wide, inclining to elongated-elliptical, more or less acute or pointed. The flowers, as far as can be ascertained, accord with Endlicher's character, except that the short lobes of the calyx in the female flowers are valvate in æstivation, and the divisions of the male perianth and the stamens apparently only 3. Stigmas 6 to 8, linear, recurved. Drupes globose, baccate, a third of an inch in diameter, capitate-clustered on the short branches of the apparently erect and thyrsoid inflorescence. Pyrenæ 8, compressed, coriaceous or cartilagineous. Albumen between fleshy and horny. Embryo minute, next the hilum: radicle cylindrical, longer than the cotyledons, superior.

According to Dr. Hooker, the petiole is articulated with the lamina in the New Zealand species: but there is no trace of such articulation in this and the following species.

PLATE 96.—BOTRYODENDRUM TAITENSE: fruiting branches of the narrow and the broader-leaved forms, of the natural size. Fig. 1. A staminate flower. 2. A pistillate flower. 3. Vertical section of the same. 4. Transverse section of a drupe. 5. Vertical section of a drupe, and of one of the contained seeds. 6. Embryo.—The details variously enlarged.

2. BOTRYODENDRUM MACROPHYLLUM, *Rich, in Herb.* (Plate 97.)

B. foliis obovato-lanceolatis basi attenuatis membranaceis ad apicem ramorum confertis.

HAB. Samoan or Navigators' Islands: in forests. Also, according to Dr. Pickering's notes, at Tongatabu, Friendly Islands, where it was likewise gathered by Mr. Matthews.

This is said to be "a simple shrub, from 10 to 25 feet high." Whether it is really distinct from the preceding species cannot be satisfactorily determined from the present materials, which consist of foliage, some badly preserved fertile flowers, a detached portion of male inflorescence (which perhaps belongs to *B. Taitense*), and mature fruit. The *leaves* are much larger than those of the former species, being from 2 to 2½ feet in length, and 3 to 5, or towards the apex 6 inches wide, *obovate-lanceolate* or oblanceolate in form, rather abruptly acuminate, tapering downwards to the acute base, *membranaceous* when dry, perhaps rather succulent when fresh, on petioles of 3 to 5 inches in length, *crowded* at the summit of the stem or branches. The capitula of fertile flowers are sessile along an apparently simple rhachis. Teeth or lobes of the calyx of the fertile flowers 6 or 8, irregular, or becoming so after opening, valvate in æstivation, shorter than the 8 recurved stigmas. Ovary eight-celled.

Ovule solitary in each cell, suspended from its summit, anatropous; the rhaphe ventral. Fruit as in *B. Taitense.* Pyrenæ 8, lunate. Embryo not seen.

PLATE 97.—BOTRYODENDRUM MACROPHYLLUM: foliage with flowers and fruit, of the natural size. Fig. 1. Vertical section of a fertile flower-bud. 2. Vertical section of a fertile flower. 3. Summit of a fertile flower after anthesis, showing the calyx (the stigmas removed). 4. The same, with the stigmas. 5. Transverse, and 6, longitudinal section of a drupe. 7. A detached pyrena.—The details variously enlarged.

ARALIACEA?—On high land, near Waianae, Oahu, some branches with nascent foliage and young flower-buds were gathered from "an Araliaceous tree, twenty feet high," of which, for want of sufficient materials the genus cannot be made out. The following data which the specimens furnish will serve to indicate the tree to future collectors in the Sandwich Islands.

Branchlets slender (for an *Araliacea*), with a wrinkled and warty bark, nodose with the scars of former petioles; the bark not pungent to the taste. Young foliage, &c., glabrous. Stipules none. Leaves alternate, on slender petioles which are slightly dilated at the base. Leaves either trifoliolate or pinnately quinquefoliolate; the developing leaflets ovate or obovate, petiolulate, entire or undulate, mostly less than an inch long. Male flowers somewhat umbellate or fascicled on the divisions of a small paniculate inflorescence, which arises from the base of the leafy shoot of the season: the buds half a line in diameter, short-pedicelled. Calyx four-lobed, or sometimes five-lobed. Corolla globular in the bud, the 4 or 5 petals moderately *imbricated* in æstivation. Stamens 4 or 5, alternate with the petals: filaments short: anthers oblong, two-celled, incumbent. Ovary abortive, so that the calyx appears as if inferior: a minute stylopodium occupies the place of the style or stigmas. Fertile flowers entirely unknown.

ORD. CORNACEÆ.

1. GRISELINIA, *Forst.*

1. GRISELINIA LUCIDA, *Forst.*

Griselinia lucida, Forst. Prodr. Fl. Ins. Austr. p. 75; A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 261; Hook. f. Fl. N. Zeal. p. 98.
G. littoralis, Raoul, Fl. N. Zel. p. 22, t. 19 (forma latifolia).
Scopolia lucida, Forst. Char. Gen. t. 70.
Pukateria littoralis, Raoul, in Ann. Sci. Nat. ser. 3, 2, p. 120.

HAB. Bay of Islands, New Zealand.

2. COROKIA, *A. Cunn.*

1. COROKIA BUDDLEOIDES, *A. Cunn.*

Corokia buddleoides, A. Cunn. Bot. N. Zeal. in Ann. Nat. Hist. 3, p. 249; Hook. Ic. Pl. t. 424; Hook. f. Fl. N. Zeal. p. 98.

HAB. New Zealand; at the Bay of Islands.

ORD. BRUNIACEÆ.

1. BRUNIA, *Linn.*

1. BRUNIA NODIFLORA, *Linn.*

HAB. Cape of Good Hope, in the vicinity of Cape Town.

ORD. LORANTHACEÆ.*

1. LORANTHUS, *Linn.*

* *Brasilienses.*

1. LORANTHUS (PSITTACANTHUS) DICHROOS, *Mart.*

Loranthus dichroos, Mart. in Schult. Syst. Veg. 7, p. 122; DC. Prodr. 4, p. 122.
Psittacanthus dichroos, Mart. in Flora (Regensb. Bot. Zeit.) 1830, 1, p. 108; Don, Syst. Gard. & Bot. 3, p. 415.

HAB. Brazil; in the neighbourhood of Rio Janeiro, and Organ Mountains.

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* Although widely separated in the sequence of orders which it is still convenient to follow, the *Olacaceæ*, *Loranthaceæ*, and *Santalaceæ*, as is now well known, are closely related, and belong to one class or alliance.

2. Loranthus (Psittacanthus) Jacquini, *DC.*

Loranthus Jacquini, DC. Prodr. 4, p. 308.
L. Americanus, Jacq. Stirp. Amer. p. 97, t. 67; Cham. & Schlecht. in Linnæa, 1, p. 210.
Psittacanthus Jacquini, Don, l. c.

Hab. Organ Mountains, and in the neighbourhood of Rio Janeiro, Brazil.

3. Loranthus (Struthanthus) marginatus, *Lam.*

Loranthus marginatus, Lam. Dict. 3, p. 596; Schult. Syst. Veg. 7, p. 137; DC. Prodr. 4, p. 289.
L. (Struthanthus) citricola, Mart. l. c.

Hab. Organ Mountains, probably not far from Rio Janeiro, Brazil.

* * *Chilenses.*

4. Loranthus (Struthanthus) heterophyllus, *Ruiz & Pav.*

Loranthus heterophyllus, Ruiz & Pav. Fl. Per. & Chil. 3, p. 48, t. 273; DC. Prodr. 4, p. 312; Hook. & Arn. in Bot. Misc. 3, p. 359; Gay, Fl. Chil. 3, p. 157.
L. buxifolius, Cham. & Schlecht. in Linnæa, 1, p. 207; DC. l. c.
L. Eschscholtzianus, Mart. in Schult. Syst. Veg. 7, p. 117.
Struthanthus Eschscholtzianus, Mart. in Flora, l. c.

Hab. Chili, near Valparaiso.

5. Loranthus (Tristerix) tetrandrus, *Ruiz & Pav.*

Loranthus tetrandrus, Ruiz & Pav. Fl. Per. & Chil. 3, p. 46, t. 275; DC. Prodr. 4, p. 307; Hook. & Arn. l. c.
Tristerix tetrandrus, Mart. in Flora, l. c. p. 109; Don, l. c.

Hab. Chili; abundant from Valparaiso to the Cordilleras, near Santiago.

6. Loranthus (Tristerix) aphyllus, *Miers.*

Loranthus aphyllus, Miers, ex Bert.; DC. Prodr. 4, p. 307; Hook. & Arn. in Bot. Misc. 3, p. 357.
L. Cactorum, Hook. & Arn. in Bot. Beech. Voy. p. 25.
Tristerix aphyllus, Don, Syst. Gard. & Bot. 3, p. 418.

Hab. Near Santiago, Chili; growing on *Cereus Chilensis;* according to Dr. Pickering's notes. No specimens are found in the collection.

* * * *Novo-Zelandici.*

7. Loranthus (Dendropthoe) tetrapetalus, *Linn. f.*

Loranthus tetrapetalus, Linn. f. Suppl. p. 217; Forst. Prodr. p. 25; Hook. f. Fl. N. Zeal. p. 99.

Hab. Bay of Islands, New Zealand. (Foliage only.)

* * * * *Polynesici.*

8. Loranthus (Dendropthoe) Forsterianus, *Schult.*

Loranthus Forsterianus, Schult. Syst. Veg. 7, p. 114; DC. Prodr. 4, p. 295; Guill. Zeph. Tait. p. 54.
L. Stelis, Forst. Prodr. Fl. Ins. Austr. p. 25, & descr. ex Ms. in Zeph. Tait. l. c.
Dendropthoe Forsterianus, Don, Syst. Gard. & Bot. 3, p. 419.

Hab. Tahiti and Eimeo, Society Islands.

The specimens (in flower only) furnish nothing of importance to add to the description given by Schultes, and to that of Forster, which has been reproduced by Guillemin. In one specimen the leaves incline to be obovate and obtuse. The flowers are frequently hexamerous.

9. LORANTHUS (DENDROPTHOE) INSULARUM, Sp. Nov. (Tab. 98.)

L. glaber; ramis teretibus; foliis oppositis petiolatis ovatis obtusis subquintuplinerviis vix venosis; pedunculis axillaribus brevibus racemoso-plurifloris; pedicellis trifloris; floribus (sesqui–bipollicaribus) hexa-heptameris.

HAB. Feejee Islands; at Vanua-levu and Rewa. Samoan Islands; on Tutuila and Savaii. Tongatabu.

There are various forms in the collection; but they appear all to belong to one species, which is nearly related to *L. Forsterianus*, but distinguished by its larger and usually rounder leaves and larger *flowers*, either *hexamerous or heptamerous*. It is parasitic on *Inocarpus* and other trees. *Branches terete, glabrous*, as is the whole plant. *Leaves opposite*, coriaceous, *ovate*, varying to roundish or to oblong, *obtuse*, often rounded at the apex, but sometimes narrowed, either rounded at the base, or abruptly contracted into a petiole of 3 to 6 lines in length, 2 to 3½ inches long, 1½ to 2 inches wide, rather dull, the midrib sending off 3 or 4 rather inconspicuous ascending veins on each side, mostly towards its base, so that the leaf appears quintuplinerved; the veinlets very obscure or wanting. *Peduncles axillary*, or mostly from the old wood whence the leaves have fallen, *short* (about half an inch long, the rhachis about the same length or longer), horizontal, terete, *racemosely many-flowered;* the *pedicels* opposite, 3 or 4 pairs with a terminal one, a line and a half long, recurved, *three-flowered*. Flowers hermaphrodite, pendulous, sessile on the apex of the pedicel, or the two lateral ones slightly pedicellate; each subtended at the base of the cylindraceous ovary by a short and broad, half-clasping, ovate bractlet. Limb of the calyx half a line long, truncate, slightly repand. Corolla red, or often yellow towards the base, linear-filiform in the bud, 1½ or 2 inches long, of 6 or 7 narrowly linear valvate petals, which at first are connivent or cohering into an angled tube, the limb (3 lines long) spreading in anthesis, at length separating quite to the base, and deciduous. Filaments 6 or 7, equal, connate to the face of the petal up to the spreading portion which constitutes the limb; the free portion about the length of the narrowly linear and mucronulate anther, which is fixed by its base. Style as long as the stamens: stigma slightly capitate, entire. Fruit not seen.

PLATE 98.—LORANTHUS INSULARUM: from the Feejee Islands; a branch, of the natural size. Fig. 1. Pistil, with the calyx, and two petals with their stamens, enlarged. 2. An anther, more magnified.

* * * * * *Australasici.*

10. LORANTHUS (DENDROPTHOE) MAYTENIFOLIUS, Sp. Nov. (Tab. 99.)

L. glaber; ramis teretibus; foliis oppositis breviter petiolatis ovali-obovatis vel subrotundis sæpius retusis opacis obsolete tripli–quintuplinerviis; pedunculis terminalibus brevissimis 6–12-floris; floribus brevissime pedicellatis penta-hexameris; calycis limbo cupulari ovario paullo breviore; antheris linearibus.

HAB. Woolongong, New South Wales.

A *glabrous* parasitic shrub, with gray *terete branches. Leaves opposite, oval, obovate or roundish, often retuse,* narrowed at the base into a petiole of about 3 lines in length, dull and *opaque, obscurely triplinerved or quintuplinerved,* the midrib also obscure, except near the base; the veins not apparent, the texture apparently fleshy-coriaceous, 1½ to 2 inches in length. *Peduncles terminal,* or in the upper axils, very short, not exceeding the petioles, usually dichotomous, the very short divisions 3–6-flowered. *Flowers* cymulose, *very short-pedicelled,* or the central one of each cluster sessile, hermaphrodite. Bractlet oblong at the base of the short cylindraceous ovary. *Limb of the calyx cupulate, almost as long as the ovary,* entire, or obscurely repand. Corolla an inch and a half long, slender, of 5 or 6 narrow petals connate into a tube, at length separable. *Anthers linear,* scarcely thicker than the filament, and about the length of its free portion, 3 lines long, apiculate. Style straight. Stigma subcapitate.

PLATE 99.—LORANTHUS MAYTENIFOLIUS: a flowering branch, of the natural size. Fig. 1. Details of the flower, enlarged. 2. Anther, more enlarged.

11. LORANTHUS (PSITTACANTHUS?) CELASTROIDES, *Sieber*. (Tab. 100.)

L. glaber; ramis teretibus; foliis oppositis obovato-oblongis seu ellipticis basi attenuatis breviter petiolatis obtusissimis fere aveniis; pedunculis axillaribus vel ramulos breves bifoliatos desinentibus brevibus cymulifloris; floribus breviter pedicellatis pentameris unibracteolatis; antheris ovali-oblongis dorso-fixis versatilibus.

Loranthus celastroides, Sieb. Pl. N.-Holl. Exsic. no. 244 (sine fl. & fruct.); Schult. Syst. 7, p. 163; DC. Prodr. 4, p. 318.

HAB. Woolongong, New South Wales; and near Sydney.

The specimens bear flowers, which have not before been described. The plant is *glabrous*, except an extremely minute pubescence on the peduncles and nascent parts. *Branches terete*, nodose. *Leaves opposite, obovate, oblong, or elliptical*, with a *narrowed base*, contracted into a very short petiole, 1½ to 2 inches long, *very obtuse*, dull, thick and fleshy-coriaceous in texture, *nearly veinless*, even the midrib inconspicuous except towards the base. *Peduncles axillary*, or more commonly *terminating short and two-leaved axillary branchlets*, 2 to 5 lines long, *cymosely several-flowered*. *Flowers in threes*, the lateral *short-pedicelled*, the intermediate one sessile, or sometimes all pedicelled, each subtended by a small ovate bractlet, recurved, *pentamerous*. Ovary ovoid. Calyx-tube short, coroniform, truncate, puberuleat on the edge, which is entire or obscurely denticulate, at length sometimes 4–5-toothed or lobed. Corolla apparently red or purple, an inch and a quarter in length, curved in the bud, and the apex clavate-thickened; the slender petals connivent into a tube, but separating after anthesis. Filaments free down almost to the middle: *anthers oval, or short-oblong*, emarginate at both ends, *fixed by the middle, versatile*. Style filiform, as long as the stamens: stigma minute, subcapitate. Fruit not seen.

PLATE 100.—LORANTHUS CELASTROIDES: a flowering branch, of the natural size. Fig. 1. Details of the flower, enlarged. 2, 3. Anthers, more magnified.

12. Loranthus (Psittacanthus?) eucalyptoides, *DC. l. c.*

Loranthus eucalyptifolius, Sieber, Pl. Nov. Holl. Exsic. no. 242; Schult. Syst. Veg. 7, p. 163, non H. B. K.

Hab. New South Wales, near Sydney.

Of this species, as of the preceding, neither the flowers nor the fruit were known. They occur on our specimen, and are almost exactly like those of *L. celastroides*. Moreover, some of the leaves, instead of elongated-lanceolate and somewhat falcate, are elongated-oblong, very obtuse, and less than two inches in length;—raising the question, whether it may not be an extraordinary form of the foregoing species.

13. Loranthus (Dendropthoe) pendulus, *Sieber*.

Loranthus pendulus, Sieber, Pl. Nov. Holl. Exsic. no. 241; DC. Prodr. l. c. & Mem. Loranth. t. 1.

Hab. New South Wales; in the vicinity of Sydney.

14. Loranthus (Dendropthoe) Cunninghamii.

Loranthus nutans, A. Cunn. in Mitch. Jour. Trop. Austral. p. 158, in adnot., non Spreng.

Hab. New South Wales, near Sydney.

15. Loranthus (Dendropthoe) Philippensis, *Cham. & Schlecht.*

Loranthus Philippensis, Cham. & Schlecht. in Linnæa, 1, p. 204; DC. Prodr. 4, p. 302.

Hab. Luzon; in the mountains near Baños.

2. TUPEIA, *Cham. & Schlecht.*

1. Tupeia antarctica, *Cham. & Schlecht.*

Tupeia antarctica, Cham. & Schlecht. in Linnæa, 3, p. 203; Hook. f. Fl. N. Zeal. p. 101, t. 26.
T. Cunninghamii & T. pubigera, Miquel, in Linnæa, 18, p. 85.
Viscum antarcticum, Forst. Prodr. Fl. Ins. Austr. p. 70; A. Rich. Fl. N. Zel. p. 369.
V. pubigerum, A. Cunn. Bot. N. Zeal.

Hab. Bay of Islands, New Zealand. (In fruit.)

3. PHORADENDRON, *Nutt.*

Phoradendron, Nutt. in Jour. Acad. Philad. n. ser. I, p. 185; Engelm. in Gray, Pl. Fendl. p. 58, adnot.
Viscum, sect. 2, DC. Prodr. 4, p. 279.

1. Phoradendron Schottii.

Viscum Schottii, Pohl, in DC. Prodr. 4, p. 281.

Hab. Brazil; on the Organ Mountains.

Only female plants of this and of the two following species were collected: consequently I cannot verify the essential generic character. In all of them the ovary is crowned with a three-lobed perianth, as in many *Visca*.

2. Phoradendron pepericarpum, Sp. Nov.

P. ramis teretibus; foliis ovalibus ovato-oblongisve obtusis basi attenuatis breviter petiolatis crassis tri–quinquenerviis aveniis; spicis in axillis geminis, fructiferis folio triplo quadruplove brevioribus, vaginulis bifidis; baccis globosis.

Hab. Brazil; on the Organ Mountains. (Also gathered by Gardner, No. 5478.)

There are only fruiting specimens of this species; which is apparently related to Pohl's *Viscum crassifolium*. The plant is large, with long and *terete branches* and branchlets, glabrous. *Leaves* 3 or 4 inches long, rather narrowly *oval or ovate oblong, obtuse, narrowed at the base* into a petiole of about 3 lines in length, *thick*, evidently 3–5-*nerved*, otherwise *veinless*. *Fertile spikes in pairs*, or sometimes in threes, in the axils of the leaves, slender, in fruit an inch or an inch and a half long; the many-flowered joints 3 lines long; the short *sheaths two-cleft*, very obtuse. *Berries spherical*, about a line and a half in diameter, but immature, their bases separately immersed in hollows of the rhachis.

3. Phoradendron chrysocladon, Sp. Nov.

P. ramulis compressis; ramis teretibus auratis; foliis ovatis sæpius acuminatis brevissime petiolatis crassis subtus obsolete tripli–quintuplinerviis costa prominula supra nitidulis reticulato-venosis; spicis in axillis solitariis ternisve, fructiferis folio paullo brevioribus pauci-articulatis, articulis truncato-bilobis.

Hab. Brazil; near Rio Janeiro.

Apparently a widely diffused species; as it appears to be the same as one gathered at Bahia by Salzmann, at Piauhy by Gardner (No. 2884), and in British Guiana by Schomburgk (No. 554, of 1st coll.). It is evidently allied to *Viscum flavens*, Swartz; but the venation is different, and the spikes are proportionately longer. We have only the female plant. *Branches terete, tinged with golden yellow;* the *young branchlets compressed* or ancipital. *Leaves* 2 or 3 inches long, *ovate* or oval-oblong, *mostly acuminate*, often conspicuously so, abruptly contracted at the base into a very short petiole, thick and coriaceous, often yellowish, *obscurely triplinerved or quintuplinerved underneath*, the narrow *costa prominent, above lucid and conspicuously reticulate-*

veiny. Fertile *spikes solitary or in threes* in the axils, 1½ to 2 inches long when fully developed, of 3 or 4 elongated and many-flowered joints; the sheaths truncately two-lobed. Female flowers sunk in excavations of the rhachis. Perianth three-lobed. Young fruit globular.

4. VISCUM, *Tourn.*

1. Viscum articulatum, *Burm.*

Viscum articulatum, Burm. Fl. Ind. p. 311; DC. Prodr. 4, p. 284.
V. compressum, Poir. Dict. Suppl. 2, p. 861; Decaisne, Herb. Timor. p. 87; Blume, Fl. Jav. Loranth. t. 26.

Hab. Feejee Islands; Ovolau, Vanua-levu, &c.: parasitic on *Inocarpus.* Also, a remarkably condensed form, in the mountains of Muthuata.

2. Viscum moniliforme, *Blume.*

Viscum moniliforme, Blume, Bijdr. p. 667, & Fl. Jav. l. c. t. 25; DC. l. c.; Cham. & Schlecht. in Linnæa, 3, p. 202; Wight, Ic. Pl. Ind. Or. t. 1018, 1019.
V. opuntioides, Forst. Prodr. Fl. Ins. Austr. p. 70, non Linn.
V. platycaulon, Bertero, ined.

Hab. Tahiti, Society Islands (mostly with narrow articulations). Sandwich Islands: on *Acacia Koa*, and other trees:—the articulations varying in different specimens from a line and a half to an inch in breadth!

No male flowers were collected; but those of *V. articulatum* are figured by Blume (under the name of *V. compressum*, Poir.) with adnate and multiporose anthers. The form of the articulations is exceedingly various in different specimens; in some states they seem to be almost terete: others appear to pass into the preceding species. Their elucidation requires better materials than the present collection affords.

5. MYZODENDRON, *Banks & Soland.*

1. MYZODENDRON PUNCTULATUM, *Banks & Soland.*

Misodendron (sphalm.) *punctulatum*, DC. Prodr. 4, p. 286, & Mem. Loranth. t. 11, 12. *Myzodendron* (*Gymnophyton*) *punctulatum* (Banks & Soland. Mss.), Hook. f. Fl. Antarc. p. 289, t. 102, 104, 106.

HAB. Orange Harbour, Fuegia. "Very common and conspicuous on the Antarctic Beech."

2. MYZODENDRON BRACHYSTACHIUM, *DC.*

Myzodendron (*Misodendron*) *brachystachium*, DC. Mem. Loranth. p. 14, t. 12, f. 1, & Prodr. l. c.; Hook. f. Fl. Antarc. p. 297, t. 103, 105, 106, 107.

HAB. Orange Harbour, Fuegia; on *Fagus Antarctica* and *F. betuloides*.

The botanical history, structure and affinities, as well as the anatomy and parasitism of *Myzodendron*, have been most ably and elaborately illustrated by Dr. Hooker, in the work above cited. I have only to add that *M. oblongifolium*, DC. l. c.; Deless. Ic. Sel. 3, t. 80; Pœpp. & Endl. Nov. Gen. & Spec. t. 2; Hook. f. l. c., is not to be distinguished from *M. brachystachium* by the foliage (our specimens combining the two on the same individuals), but only by the greater length of the plumose setæ of the fruit, a character not likely to be constant; so that this species will doubtless be suppressed.

ADDITIONS AND CORRECTIONS.

To p. 74, lowest line, after *Kuhlia Brasiliensis*, add: (*Banara Vellozii*, Gardn. in Hook. Lond. Jour. Bot. 2, p. 331.)

To p. 87, add: 2. IONIDIUM SETIGERUM, *St. Hil.*

Ionidium setigerum, St. Hil. Fl. Rem. Bres. p. 297, t. 27, & Fl. Bras. Mer. 2, p. 142.

HAB. Brazil; in the Organ Mountains, near Rio Janeiro.

To p. 138. SCHIEDEA DIFFUSA. — This was also collected by Mr. Macrae, on Mouna Kea, in June, 1825. His specimen has a less effuse panicle, as well as shorter and entirely glabrous pedicels.

Page 206, line 2 from bottom, for *ejusdem* read *eodem*.

Page 291. *Perrottetia Sandwicensis* was first collected by Mr. Nelson, in Cook's third voyage.

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